

F-4

Phantom II

D&S
Vol. 12

USN & USMC
VERSIONS

Part 3



in detail & scale

Bert Kinzey

DETAIL & SCALE SERIES

The "Detail & Scale" series of publications is unique in aviation literature. Unlike other publications on military aircraft, this series does not emphasize the history or markings carried by the aircraft featured. Instead, attention is focused on the many physical details of the aircraft such as cockpit interiors, radar and avionics installations, armament, landing gear, wheel wells, and ejection seats. These details are covered more thoroughly than in any other series, and are presented in the form of close-up photography and line drawings. Special consideration is given to the detail differences between the variants and sub-variants of the aircraft.

This detailed coverage is supplemented with scale drawings that show five full views. Charts and tables provide extensive amounts of technical data, making this series one of the most complete technical references on aircraft that is available.

Although a brief historical summary is always presented, it is not intended to be all inclusive. It will, however, provide the most important dates and events in the development and operational life of each aircraft.

For scale modelers, a modeler's section is provided that reviews scale model kits of the aircraft, and lists the decals available for these kits.

The "Detail & Scale" series is detailed, technical, and accurate, providing the most comprehensive coverage of this nature that is available anywhere in aviation publications.

ABOUT THE AUTHOR

Bert Kinzey, author, and president of Detail & Scale, Inc. was born in Richmond, Virginia in 1945. The following year his family moved to Blacksburg, Virginia where his father became a professor of architecture at Virginia Tech (VPI). Until he was about six years old, Bert was often frightened by the loud piston-driven military fighters that sometimes flew low over his home while he was outside playing. On more than one occasion he came running into the house extremely frightened by an aircraft that had just flown over.

His father took him to the VPI airport, where cadets were learning to fly on J-3 Piper Cubs, and arranged for him to go for a flight. Bert sat on his father's lap for a short trip around Blacksburg, and that forever ended his fear of airplanes. Later, Bert's father built a balsa and tissue model of the J-3 Cub, and Bert's interest in modeling began.

Bert's fear of aircraft soon gave way to a love of



The author in the rear seat of an F-5F after returning from a Red Flag mission.

aviation, and he began scale modeling. Bert looked at modeling (and still does) not as a hobby in and of itself, but a small facet of his overall interest in aviation.

In 1959 his family moved to Gainesville, Florida where his aviation interest took second place to his trumpet playing in high school. In 1964, he graduated from P.K. Yonge High School, and returned to Virginia Tech specifically to fulfill his lifetime dream to be in the Virginia Tech Regimental Band - The "Highly Tighties."

Upon graduation he was commissioned a second lieutenant in the Army, and he spent almost eight years as an army officer. During this time he commanded a Hawk guided missile battery in Korea, and later wrote and taught classes in airpower, the Soviet air threat, and air defense suppression at the Army's Air Defense School at Ft. Bliss, Texas.

In August 1976, he resigned from active duty in the Army, but his reputation as being knowledgeable in all aspects of military airpower led to a job offer as a civilian with the Department of the Army. He served in this position for four years as a "subject matter expert" in military airpower, and was responsible for the development of the Army's new program on aircraft identification, the first in the world to feature dynamic simulation. During this time he started Detail & Scale as a part-time business to provide detailed reference material on military aircraft.

Detail & Scale became so successful that Bert resigned from his position with the Army to devote full time to his new company. Since then he has written several books as well as articles for several magazines. He is also an avid modeler and member of the International Plastic Modelers Society (IPMS). He has one of the largest collections of aviation photographs in the world, and is recognized as an authority on military aircraft.

As a youngster who feared airplanes, it is ironic that Bert should now be so involved with aviation. He is a licensed pilot, and lives with his wife, Lynda, and their two children, Jan and Chip, in El Paso, Texas.

**D&S
Vol. 12**

USN & USMC VERSIONS

Part 3

F-4

Phantom II



in detail & scale

Bert Kinzey

Aero Publishers, Inc. U.S.A.

Arms and Armour Press London - Melbourne

COPYRIGHT © 1983 DETAIL & SCALE, INC.

All rights reserved. No part of this publication may be reproduced in any form, stored in a retrieval system, or transmitted by any means, electronic, mechanical, or otherwise, except in a review, without the written consent of Detail & Scale, Inc.

This book is a product of Detail & Scale, Inc. which has sole responsibility for the contents and layout. Published and distributed in the United States by Aero Publishers, Inc., and in London and Melbourne by Arms and Armour Press.

CONTRIBUTORS:

George Cockle	Don Linn
Ray Leader	Warren Munkasy
Bob Leavitt	Bill Spidle
The U.S. Navy	McDonnell Douglas

Detail & Scale would like to express a special thanks to Ensign Robin McPhillips of the Public Affairs Office at AIRLANT, VF-171 at Oceana NAS, VF-301 at Miramar NAS, and VMFP-3 at El Torro for their assistance and cooperation in the taking of photographs for this publication.

Many photographs in this book are credited to their contributors. Photos with no credit indicated were taken by the author.

Published in United States by

Aero Publishers, Inc.
329 W. Aviation Road
Fallbrook, CA 92028

Library of Congress Cataloging in
Publication Data
(Revised for Volume 3)

Kinzey, Bert.
F-4 Phantom II in Detail & Scale.
(Detail & Scale series; Vol. 12)
Contents: pt. 1. USAF—F-4C, F-4D, RF-4C—
pt. 2 USAF F-4E & F-4G
pt. 3. USN & USMC versions.
1. Phantom (Fighter planes) I. Title
UG1242.F5K526 623.74'64
81-67593
ISBN 0-8168-5011-9 (pt. 1)
ISBN 0-8168-5017-8 (pt. 2)

Published in Great Britain by

Arms and Armour Press
Lionel Leventhal Limited
2-6 Hampstead High Street
London NW3 1QQ
and in Australasia at
4-12 Tattersalls Lane
Melbourne, Victoria 3000

British Library Cataloging in
Publication Data

Kinzey, Bert
F-4 Phantom II in Detail & Scale
(Detail & Scale series)
Part 3
1. Phantom (Fighter planes)
I. Title II. Series
623.74'64 UG1242.F5
ISBN 0-85368-588-6

Printed and Published in the USA by Aero Publishers, Inc.

Front Cover: An F-4S from VF-301 is about to touch down aboard its carrier.

(McDonnell Douglas)

Rear Cover: Front cockpit in an F-4S.

INTRODUCTION



This front view of an RF-4B shows the aircraft's cross section, intakes, and refueling probe to good effect. This is one of the very few RF-4Bs to be retrofitted with thicker wings and main landing gear. This aircraft is BUNO 157346, and has a nose number of 31. (Cockle)

As part three of Detail & Scale's three-part series on the Phantom, this volume covers the U.S. Navy and Marine Corps versions of the F-4. These versions include the F-4B, N, J, S, and RF-4B. As with parts one and two, every effort has been made to cover every detail possible on these particular versions. Trips were made to both Oceana and Miramar Naval Air Stations, and to El Toro where the Marine RF-4Bs are based. A separate trip was made to Hayes International in Birmingham, Alabama where F-4s go through rebuild. McDonnell Douglas contributed photos and drawings, as did a number of other contributors who all added to the extensive coverage of this publication.

On the pages that follow, we are presenting the most detailed coverage possible on these versions of the F-4 Phantom. As is the case with most books in the Detail & Scale Series, most photographs were taken specifically for use in this publication. For security reasons, parts of the cockpits had to be covered since the photographs were taken in operational aircraft. Emphasis is given to covering the dif-

ferences between the versions. Examples of these differences include the landing gear, engines, RHAW antenna fit, and the radar used. Other details, such as wheel wells, open emergency ram air electrical generator, missile bays, engine bays, the slats on the F-4S, and much more, are presented with more photographic coverage than ever before published. This is largely due to the cooperation of Navy and Marine Corps personnel from AIRLANT, VF-171, VF-301, and VMFP-3 who arranged for these detailed photographs to be taken at their respective bases. They patiently opened cockpits, panels, radars, and camera bays, and they answered scores of technical questions. A special acknowledgement of their efforts and cooperation is due in this introduction.

Taken together, the three Detail & Scale volumes on the F-4 cover all U.S. versions of the Phantom. They present the most extensive detail coverage of the Phantom that is available to the general public, and we hope that they justify the efforts by so many to provide quality publications that this remarkable aircraft deserves.

DEVELOPMENTAL HISTORY



The first of over 5000 Phantoms. Many differences from production aircraft are visible in this photo. They include a smaller, more pointed nose, curved leading edges to the intakes, a flat rear canopy, and very small afterburner nozzles.
(McDonnell Douglas)

American aerospace technology has produced the finest military aircraft in the world during the "jet age" years since World War II. From the F-86 Sabre to the SR-71 Blackbird, and from the U-2 to the F-14 Tomcat, many aircraft have left their marks on post-war military aviation history. They have provided America's arsenal for freedom with qualitative if not quantitative superiority over the awesome and growing forces of the Soviet Union. But there can be little argument that no other aircraft has had a more dramatic effect or a longer lasting influence on U.S. and world military aviation history than the F-4 Phantom. Along with the F-8 Crusader, it changed the course of U.S. Naval Aviation, and restored it to the position of respect and power it had attained during the battles in the Pacific during World War II. The Phantom served as the premier fighter in the U.S. Navy, Marine Corps, and the U.S. Air Force for two decades, and served admirably in combat in the skies over Vietnam. Additionally, it continues to serve in the colors of a number of allied nations. Its versatility was proven as it effectively performed fleet defense, air superiority, close air support, interdiction, tactical reconnaissance, air defense suppression, and other missions as well or better than some specifically designed "single mission" aircraft. No other jet fighter can make all of these claims, and can boast of so many record setting flights that remain very impressive over twenty years after they were flown.

James McDonnell had barely opened the doors of his new company for business when World War II broke out. The war effort provided a great deal of work for the small new contractors as well as the established big names of that day such as North

American, Grumman, and Republic. McDonnell was involved largely with small contracts, but in early 1943 they received an order for a naval shipboard jet fighter. This got McDonnell started on the ground floor with jet aircraft, and the XFD-1 that resulted from this order became the first jet aircraft to fly for the U.S. Navy. That historic flight took place on January 25, 1945, prior to the end of World War II. The aircraft developed into the FH-1 Phantom, and became the first production jet fighter for the Navy.

The FH-1 was followed by the F2H Banshee in 1947, and the swept wing F3H Demon in 1951, as McDonnell Aircraft gained more experience in naval fighter aviation. But after the Demon, it looked as though McDonnell was going to turn its attention to the new United States Air Force. Their new designs featured the egg-shaped XF-85 Goblin parasite fighter and the longest fighter then flying, the XF-88 Voodoo. The XF-88 gave way to the F-101 Voodoo, which became the fastest fighter in the sky. By the mid-1950s McDonnell had established itself as a leader in the field of military aviation.

However, the question was where to go next. With Air Force acceptance of the F-101, McDonnell had plenty of work on the production lines turning out several versions of the Voodoo. But the Navy had just awarded a contract to Chance Vought for a new fighter that would be replacing the Demon and other fighters in the Naval inventory. In an attempt to stay in the field of naval aviation, McDonnell began an unsolicited study on their own which became known as the F3H-G project.

In 1954, a full-scale mock-up of the design resulting from the F3H-G study was prepared. It could best

be described as all-weather fighter-bomber, with emphasis on the bomber! It had no less than eleven hard points under the wings and fuselage, and was armed with four 20 mm cannon. Looking back, it seemed the aircraft was more likely to become an A-10 than a fleet defense interceptor.

The aircraft was a single-seater with two engines, and had the new design feature of variable inlet ramps. In late 1954, it received the designation AH-1 from the Navy, further emphasizing its attack design. But only six months later the Navy changed the entire program. They asked for the design to be modified to a two-seat, two-engine fighter to perform the fleet defense mission. The cannon were replaced with the new AIM-7 Sparrow missiles, and the designation was changed to F4H-1. Like the Voodoo, the F4H-1 was a large fighter, and the brute force of the new J79 engines from General Electric promised supersonic speeds. Design changes to the AH-1 configuration included a dihedral to the outer wing panels of twelve degrees, and a twenty-three degree anhedral to the stabilizers.

The XF4H-1 first flew on May 27, 1958, and after a fly-off competition with Chance Vought's XF8U-3 Crusader III, McDonnell Aircraft received its first order for production aircraft. As Navy and Air Force designations were standardized, these first production aircraft became F-4As instead of the F4H-1F as originally designated. The name Phantom II was assigned, thus honoring McDonnell's first naval fighter, the FH-1.

As production proceeded, several noticeable changes were made to the F-4. The nose was slender and pointed on the XF4H-1s and early F-4As, while the nose on later production aircraft were more bulbous in order to accommodate the APQ-72 radar antenna. On the prototypes, the upper portion of the

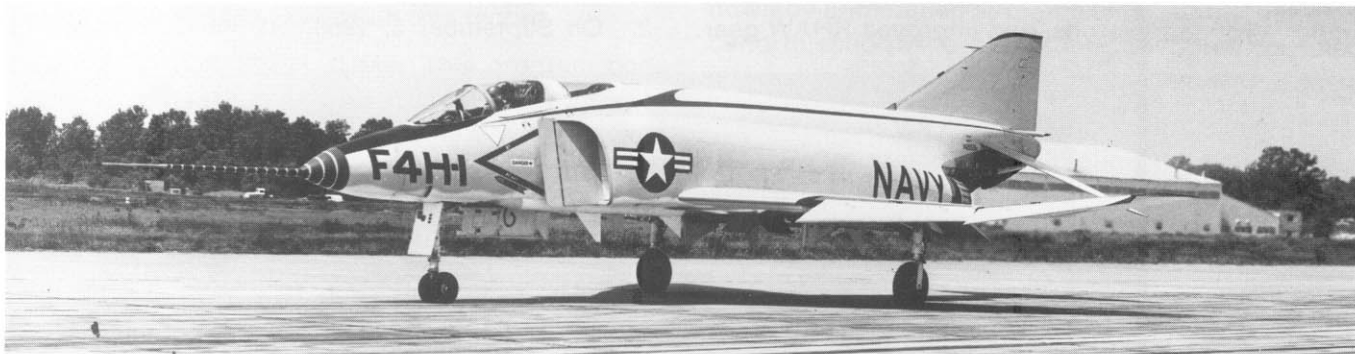
air intake lip curved forward, but this curved portion was deleted from production aircraft. The rear canopy was flush with the spine of the aircraft on early Phantoms, but this was soon replaced with a higher canopy with more of a bubble shape on the F-4B. An IR sensor, not present on the prototypes, was first added under the small nose of the F-4As, and it was also standard under the larger nose of the F-4B.

Only forty-five F-4As were built (excluding the first two XF4H-1s) before the production lines changed to the F-4B, which was to become the first major production variant. Externally visible changes for the F-4B, as compared to the F-4A, are noted above, but the F-4B also had a more powerful J79-GE-8 engine as compared to the -2 of the earlier Phantoms. In all, there were 649 F-4Bs built, but some of the F-4As were also brought up to the F-4B standards. Those that were not so modified were used for training and designated TF-4A.

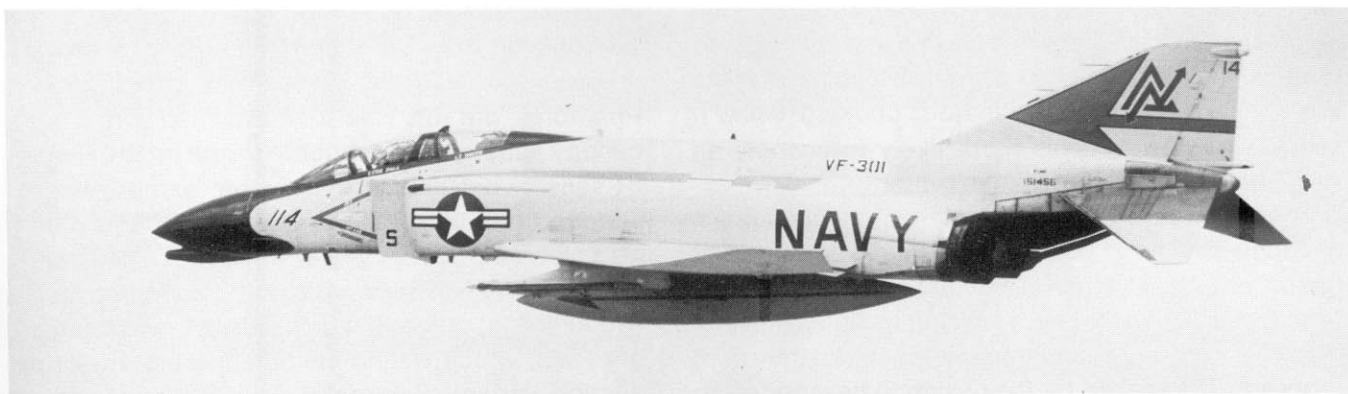
The F-4B was produced in greater numbers than any other Navy/Marine version of the Phantom. Later, twelve F-4Bs were converted to F-4Gs which had the ASW-21 two-way digital data link and an approach power compensation system for an automatic carrier landing mode. These features were to become standard in the forthcoming F-4J, but the twelve F-4Gs were converted back to the F-4B standard. This F-4G designation should not be confused with the Air Force F-4G "Wild Weasel" aircraft which is a completely different version of the Phantom.

Another conversion to -B airframes was the QF-4B drones. These were painted a bright red-orange, and could be remotely piloted from a DF-4B drone controller or a DF-8L Crusader. They were used by the Navy Missile Center at Point Mugu, California.

After the Air Force began to evaluate and later purchase the Phantom for its own use, it developed



The first F-4 ready for a test flight. Note the leading edge flaps on the wings. The curved air intake lip and flat rear canopy are particularly evident in this view. Another interesting point to note is that the main landing gear doors have been removed from the aircraft. The original designation for the Phantom was F4H, with the H being the letter assigned to the McDonnell Aircraft Company. Later, when Navy and Air Force designations were standardized, the Phantom became the F-4A, B, C, etc., as new models were introduced. (McDonnell Douglas)



After a few F-4As were built, the F-4B became the first widely produced version of the Phantom. Later, these F-4Bs were upgraded to F-4Ns. This aircraft is F-4N, 151456. A distinguishing feature of the F-4B and -N was the IR sensor mounted under the radome. (Cockle)

the RF-4C reconnaissance version, which was a modification to the F-4C airframe. Although the Navy had planned no such recon version for their own use, the RF-4C stimulated interest. As a result, similar modifications were made to F-4Bs coming off the production lines. Forty-six RF-4Bs were delivered to the Marines, all of which were conversions to ordered F-4Bs. The modifications were made during production.

In 1971, 178 F-4Bs received extensive reworks at NAS North Island and were redesignated F-4N. The F-4N is covered in more detail beginning on page 8.

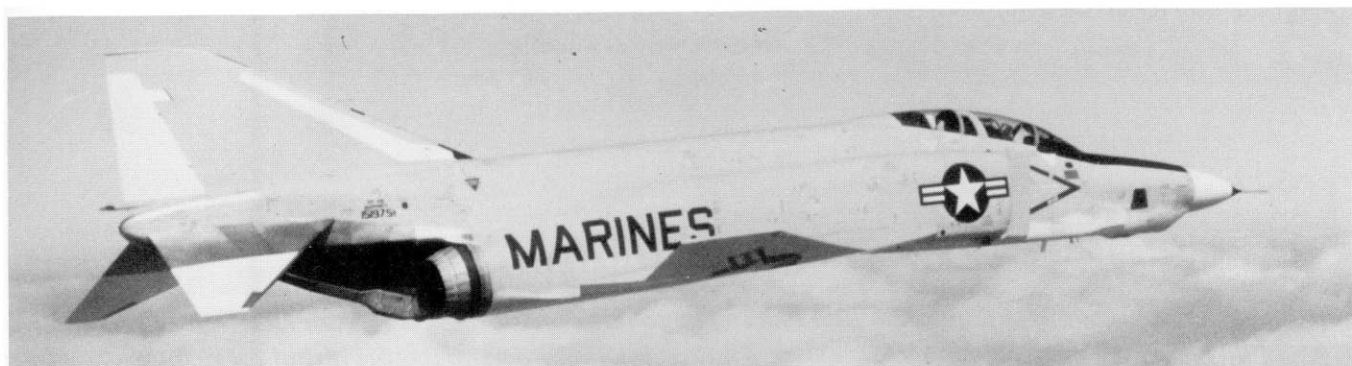
The second major production variant for the Navy and Marines was the F-4J which first flew in 1966. It was powered by J79-GE-10 engines which had an obviously longer afterburner nozzle. Other noticeable external changes included deletion of the IR sensor under the nose, thicker main gear and tires with fairings in the wings and gear doors to accommodate their greater width, and a slotted stabilator. The slotted stabilator was also retrofitted to F-4Bs and RF-4Bs. Not-so-visible changes included the AWG-10 weapons control system with its associated APG-59 radar, drooped ailerons, and improved RHAW gear.

The automatic approach power compensators, tested on the F-4G, were made standard in the F-4J.

In 1978, some F-4Js began to receive the smokeless J79-GE-10B engine and leading edge slats like those used on some Air Force F-4E and all F-4G aircraft. Structural improvements were designed to add a decade of service life to the aircraft. More information on the F-4J and -S can be found beginning on page 20.

The amazing performance of the F-4 was demonstrated by the Phantom early in its production life. Never before or since has one aircraft established so many world records in such a short period of time. These records, along with the durability of the aircraft as evidenced by its long production run and quarter century of service (and still counting), attest to the sound and versatile design of the Phantom. A summary of the Phantom's records are as follows.

1. OPERATION TOP FLIGHT: Flown by Cdr. Lawrence E. Flint, December 6, 1959, in an XF4H-1 prototype, this flight set an absolute altitude record of 98,557 feet.
2. On September 5, 1960, Marine Corps pilot, Lt-



After the Air Force bought the Phantom and developed the RF-4C reconnaissance version, the Marine Corps converted the F-4B into the RF-4B for reconnaissance purposes. A total of forty-six were built. (McDonnell Douglas)

Col. Thomas H. Miller set a speed record of 1216.76 miles per hour around a 500 km closed circuit at Edwards Air Force Base.

3. On September 25, 1960, Cdr. J.F. Davis, set a speed record for the 100 km closed circuit of 1,390.24 miles per hour.

4. On May 24, 1961, three F-4Bs flew a transcontinental dash from Los Angeles to New York. The first set a new transcontinental speed record in a time of three hours and five minutes. The second F-4B immediately broke this record in a time of two-hours and fifty minutes. But then Lt. R.F. Gordon and Lt(jg). B.R. Young in the third Phantom were better yet at two-hours and forty-eight minutes, averaging 869 miles per hour. For their record, Gordon and Young received the Bendix trophy.

5. OPERATION SAGEBURNER: This flight was flown on August 28, 1961, and was made in an early F-4A piloted by Lt. Huntington Hardisty with Lt. Earl DeEsch in the back seat. The flight was flown at less than 200 feet of altitude with an official speed record being set at 902.769 miles per hour. This record still stands.

6. OPERATION SKYBURNER: After setting the low altitude record in Operation Sageburner, the F-4 set the record for absolute speed. The flight was flown in the second prototype XF4H-1, and the only modification to the otherwise standard aircraft was a water/alcohol injection into the inlet air to cool the engine. Marine LtCol. Robert B. Robertson flew the aircraft on November 22, 1961. The record speed was 1606.3 mph.

7. Next, the Phantom set the world record for sustained altitude in excess of 66,237.8 feet when flown by Cdr. George W. Ellis on December 5, 1961. This bettered the old record by over 11,000 feet, and no fighter aircraft has ever beaten this record.

8. OPERATION HIGH JUMP: This program consisted of several flights which broke every time-to-altitude record. John Young, who flew the first Space Shuttle mission, set the time for 3,000 meters at 34.52 seconds. Cdr. David Longton then flew to 6,000 meters in 48.78 seconds. Marine LtCol. William McGraw, Jr. went to 9,000 meters in 61.62 seconds and to 12,000 meters in 77.15 seconds. Then LCdr. Del Nordberg set the 15,000 meter record at 114.54 seconds.

Next, LCdr. F. Taylor Brown climbed to 20,000 meters in 178.5 seconds, then LCdr. John Young flew again. He set the new time-to-climb record for 25,000 meters at 230.4 seconds.



This aircraft is an F-4S prior to the installation of the slats. It has received the other F-4S improvements, and has officially been redesignated. The installation of slats was delayed on some aircraft, but all F-4Ss would eventually receive them. This particular aircraft is 153791 from VMFA-333 as it appeared at Osan AFB, Korea July 27, 1982. The unit is stationed at MCAS Beaufort, SC. (McGarry via Cockle)

The last altitude record was flown by LCdr. Nordberg who had set the 15,000 meter record. In 371.43 seconds he flew to 30,000 meters, and went over 100,000 feet high before going over the top and starting back down. Thus, he bettered the altitude record set in Operation Top Flight.

It is important to note that these record flights in Operation High Jump were flown by a standard operational F-4B which was armed with four Sparrow missiles. The Soviet MiG-25 and the Air Force F-15 that bettered these marks were modified extensively, carried no armament (not even the F-15's gun), and, at least in the case of the F-15, was not even painted in order to save weight. Indeed, all record flights were flown by unmodified aircraft except for the water/alcohol injection used in Operation Skyburner as noted above.

What makes the record flights so impressive is that they are so diverse, and although they are all over twenty years old, they are quite remarkable even by today's standards.

The technology used in the F-4 has now been replaced by a more advanced technology. But this new technology has improved maneuverability, energy, and the sophistication of weapons control systems and avionics. It has really not bettered the speed and altitude capability of fighters like the Phantom that were first built almost a quarter of a century ago.

F-4B/N



An F-4N from VMFAT-101 as seen on November 23, 1980.

(Cockle)

The F-4B was the first major production variant of the Phantom, and it was also produced in larger numbers than the F-4J that followed. Many still remain in service as F-4Ns some twenty years after they were built.

Although the primary mission of the F-4B was that of fleet defense interceptor, it was equipped with the AJB-3 bombing system, and it could carry a wide variety of air-to-ground ordnance on five hardpoints. The APQ-72 radar was fitted, and the -B was powered by J79-GE-8 engines which were rated at 17,000 pounds of thrust each in afterburner. Internal fuel capacity was 2,000 gallons. An in-flight refueling probe was installed on the right side of the fuselage alongside of the cockpits, and was fully retractable. This feature became standard on all Navy and Marine Phantoms.

As lessons were learned in the skies over Vietnam, F-4Bs were fitted with radar homing and warning (RHAW) gear. A small antenna fairing appeared just above the rudder on the trailing edge of the vertical stabilizer. This became standard on later Phantoms as well.

Originally the F-4B had a non-slotted stabilator,

but later the slotted stabilator was retrofitted to help with the "mach tuck" problem encountered as the stabilator became more efficient when the aircraft decelerated from supersonic to subsonic speeds during a maneuver.

The F-4N retained the thinner wheels and tires of the F-4B as well as the -8 engine. In fact, the only easily noticeable external change was the addition of ECM antennas on the intakes. These antenna fairings were quite a bit longer than those fitted to the F-4J and -S aircraft in the same location. Some -Ns also had an antenna fairing on the top leading edge of the vertical tail in addition to the standard fitting above the rudder on the trailing edge. The IR sensor was retained under the nose.

Internally, many more significant changes were made during the F-4N rework program. A helmet-sight Visual Target Acquisition System (VTAS) was added, as was a Sidewinder Expanded Acquisition Mode (SEAM). Structural modifications extended the aircraft's fatigue life, a new power generating system was added, and old wiring and connectors were replaced. A dogfight computer was added, as was an air-to-air Identification Friend or Foe system.



This all-gray F-4N is from VMFA-321. Note the extra antenna at the top front of the vertical tail. Many F-4Ns had this antenna while others did not. This photo was taken on June 13, 1982.

(Cockle)



Two F-4Ns from VMFA-531 shown taking off from Offutt AFB on July 12, 1982.

(Cockle)



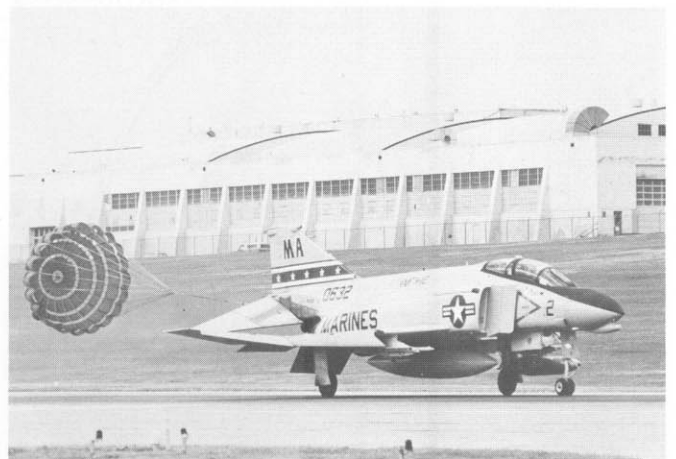
F-4N, 153053 from VF-154 stationed on the USS Coral Sea. As one of the two remaining Midway class carriers, the Coral Sea does not carry F-14s, and F-4s still comprise its fighter squadrons.

(Cockle)



This VMFAT-101 F-4N taxis with its in-flight refueling probe open and its drag chute deployed.

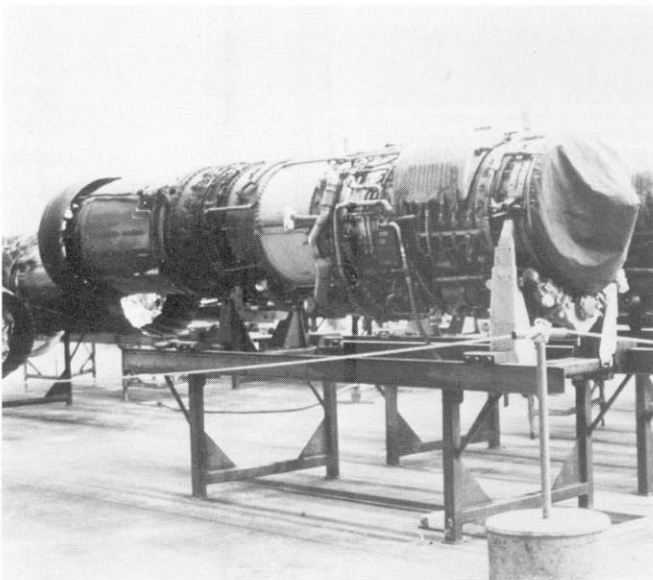
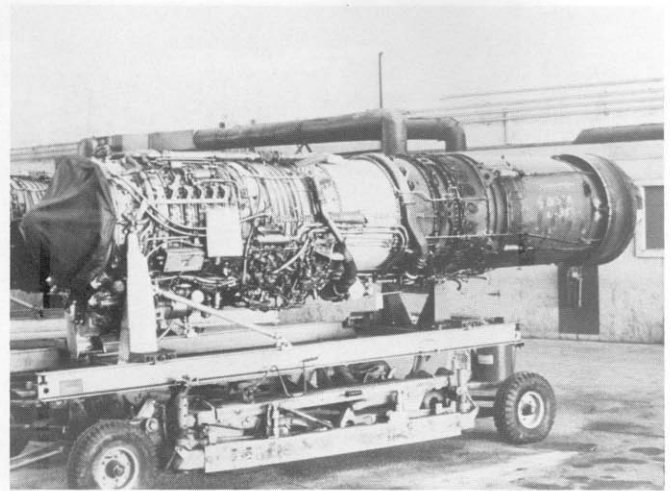
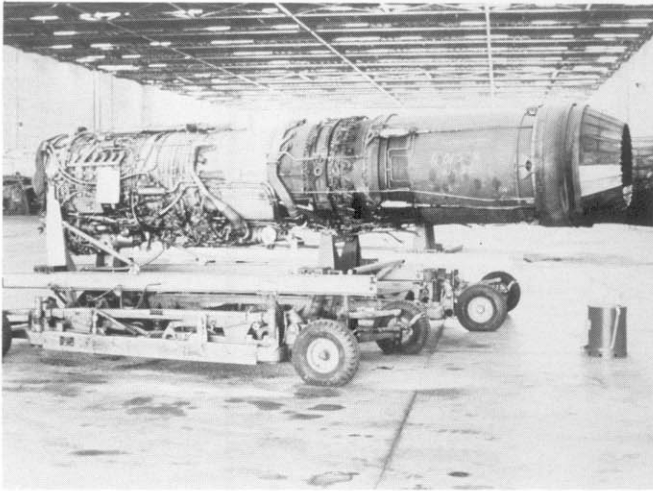
(Cockle)



This F-4N from VMFA-112 is taxiing in front of the old Martin bomber plant where B-26s and B-29s were produced during World War II.

(Cockle)

J79-8 ENGINE



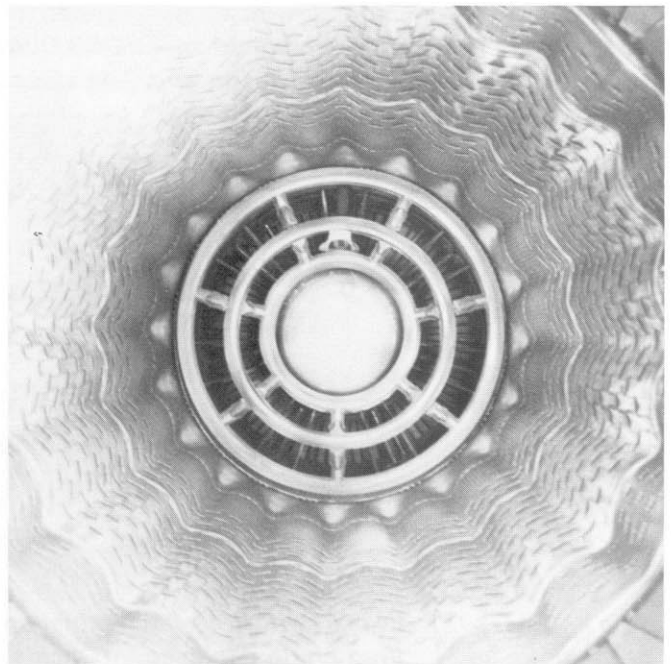
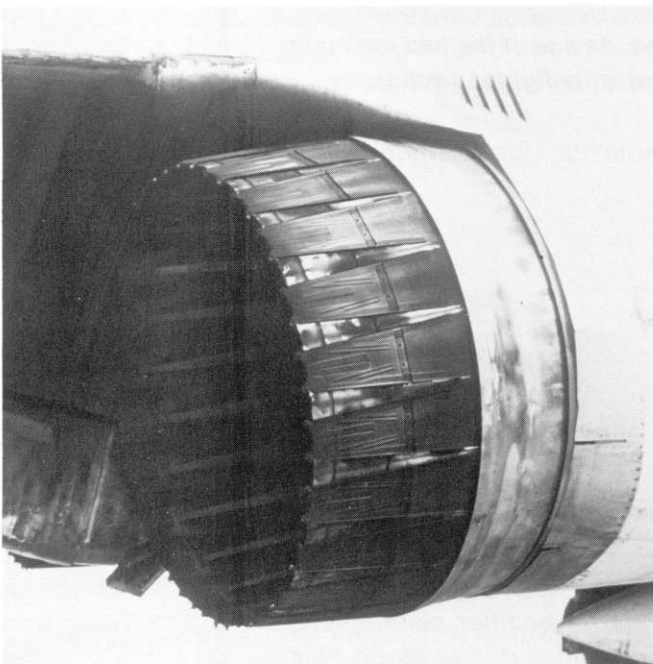
Above left: The J79-8 engine was used to power the F-4B and -N. This left rear view shows the afterburner and exhaust nozzle to good effect.

Above right: This left front view shows the mass of wires and fittings on the forward end of the engine.

Left: Right side of the J79-8 engine.

Below left: The F-4B and -N were characterized by the shorter nozzle of the -8 engine as compared to Air Force F-4Es and later Navy/Marine versions of the Phantom which had a longer nozzle. (See page 30.)

Below right: Looking up inside the afterburner can of the J79-8 engine installed on an F-4N.



NOSE LANDING GEAR



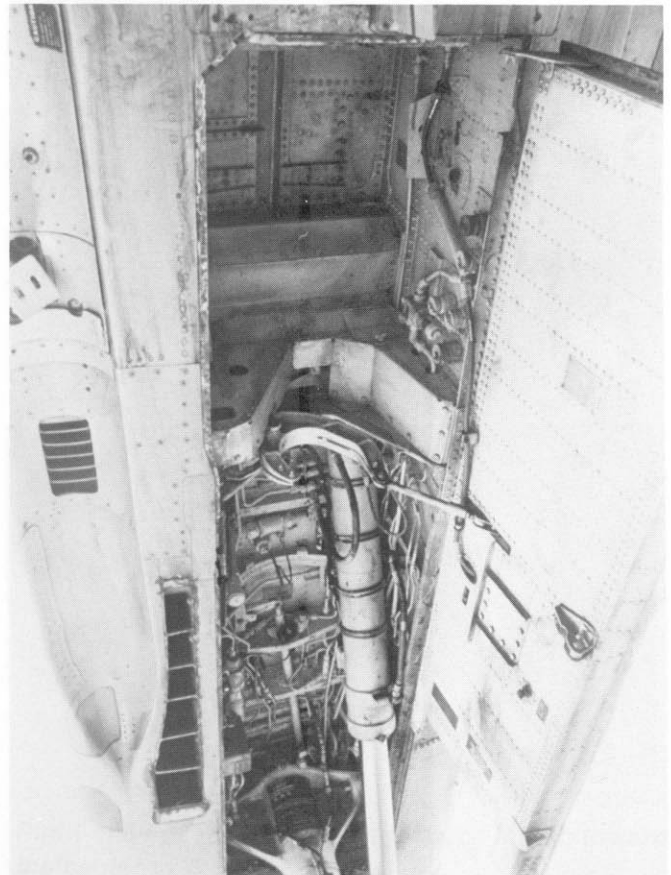
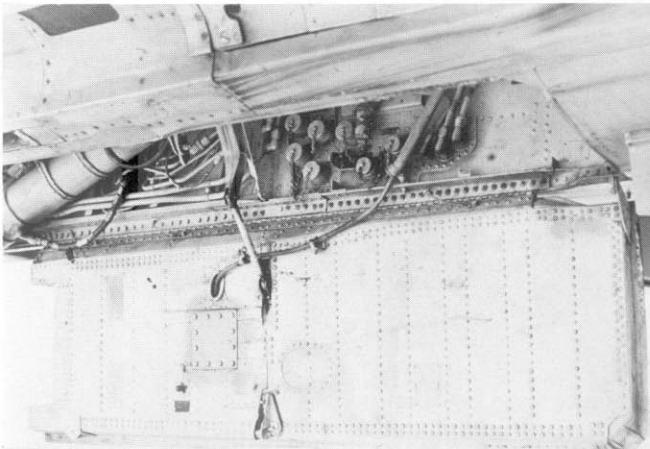
Above left: Nose landing gear as used on the F-4B and -N as viewed from the front. Note the three approach lights and the single landing/taxi light.



Above right: Nose gear viewed from the left rear. The torque link, oleo strut and retracting cylinder are visible in this view.

Below left: Inside view of the main nose gear door showing the arm that moves the door between the open and closed positions.

Below right: Looking up and forward into the nose gear well.



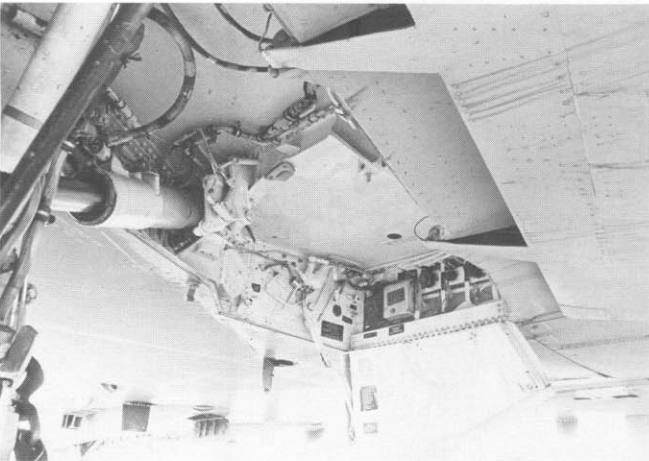
LEFT MAIN LANDING GEAR



Above left: Left main gear as used on the F-4B, -N, and RF-4B. The wheel and tire was thinner than that used on Air Force and later Navy/USMC versions of the Phantom.

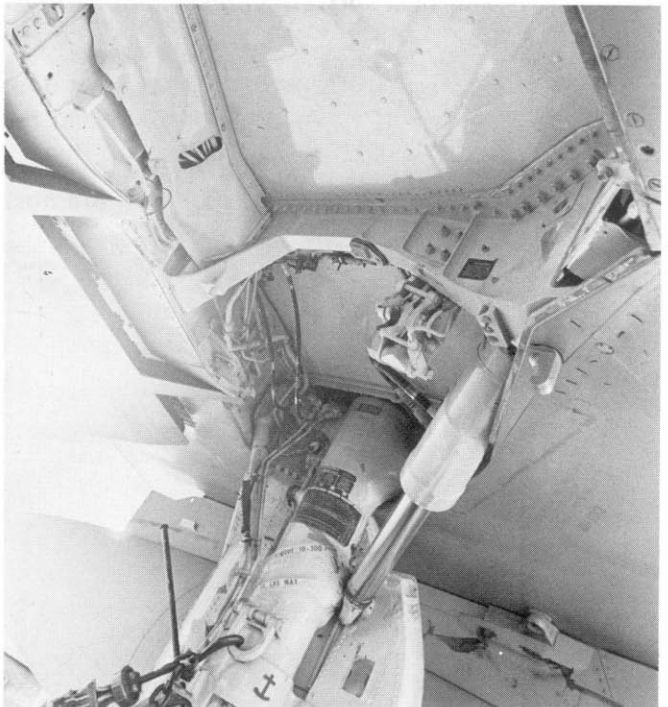
Above right: Looking at the left main gear door. With the thin tires, there was no bulge or fairing in the wing, and each main gear door was absolutely flat.

Left: Looking in toward the centerline in the left main gear well.



Below left: View showing the inner left main gear door and the inner portion of the gear well.

Below right: This photo shows the left main gear well and the view is looking out toward the strut. Aft is to the left of the photo.



RIGHT MAIN LANDING GEAR



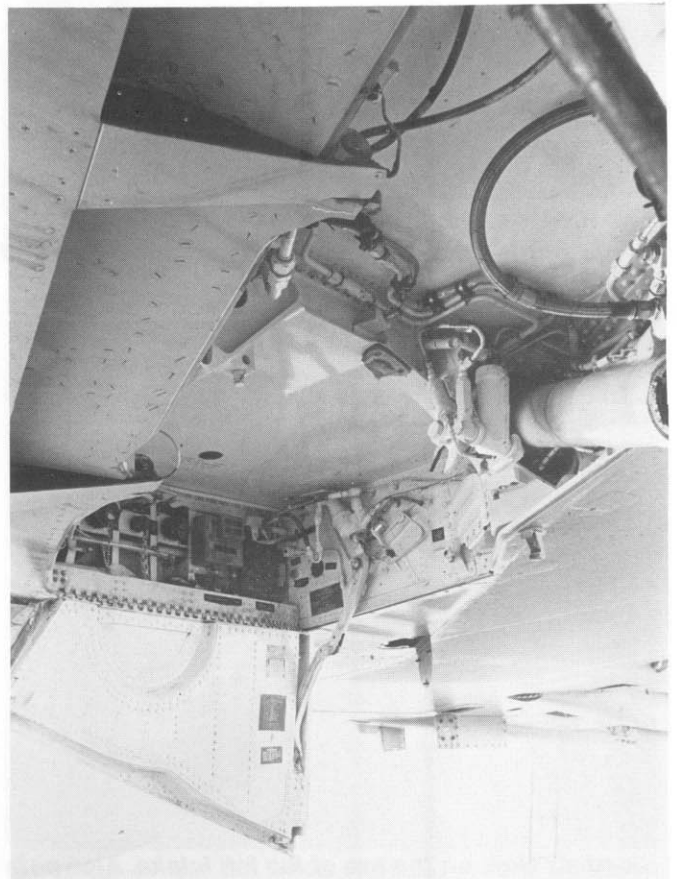
This head-on view of the right main landing gear shows the flat main door to good effect.



Outside view of the right main gear showing the angle of the outer doors.

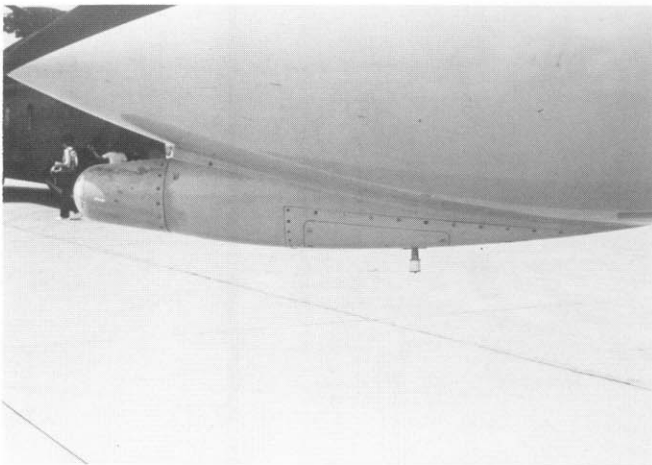


Inside view of the right main landing gear showing the wheel, main strut, and retracting cylinder.



Right main gear well looking forward and in toward the center of the aircraft.

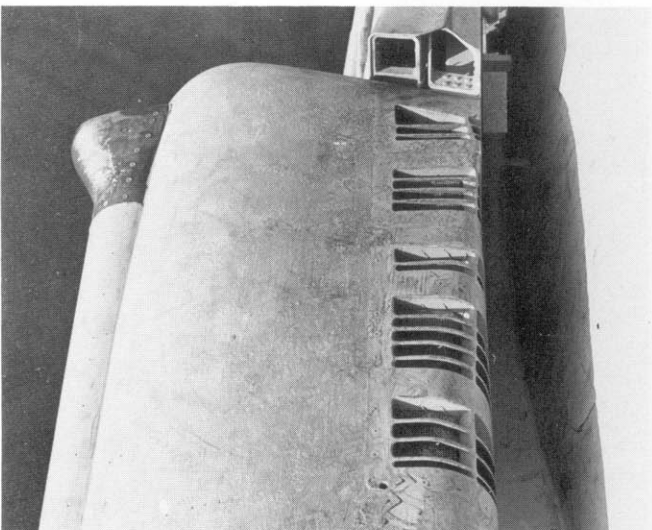
F-4B/N DETAILS



IR sensor as used on the F-4B and -N. The small white object attached under the sensor fairing is an amplifier beacon.



The RHAW antenna as fitted to the intakes on F-4Ns. F-4Bs did not have these antennas, but F-4Js and F-4Ss had a shorter version of this antenna.



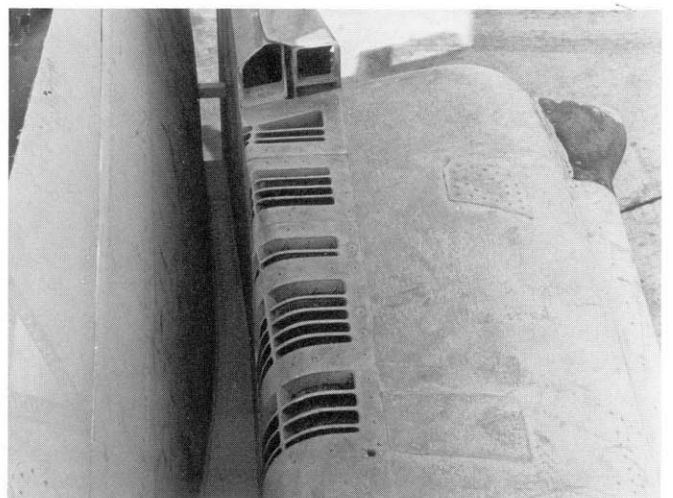
Bleed air slots on the top of the left intake. Also note the shape of the forward portion of the RHAW antenna.



This photograph of the left side of the nose shows the air conditioning intake, the variable ramps for the air intake, and the cross section for the air intake. The small "dots" just above the jet intake warning are buttons used for opening and closing the canopy.



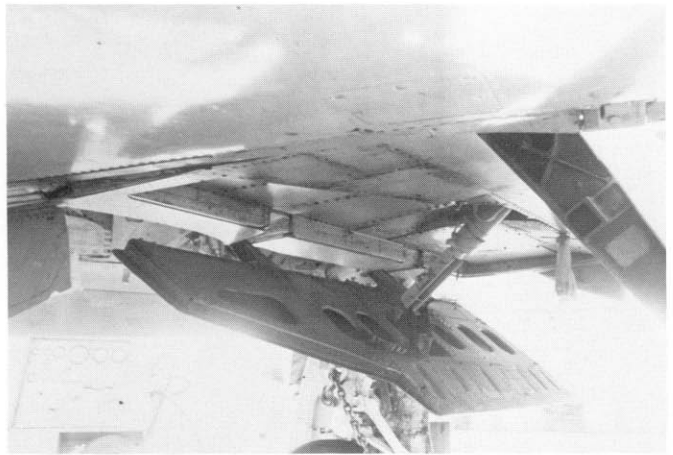
Looking down the spine of an F-4N.



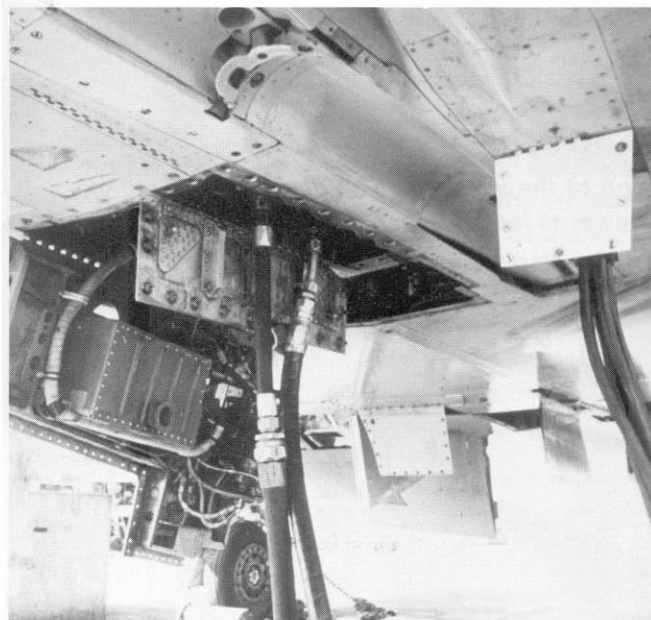
Bleed air slots on the top of the right intake.



View looking out toward the lowered left speed brake.



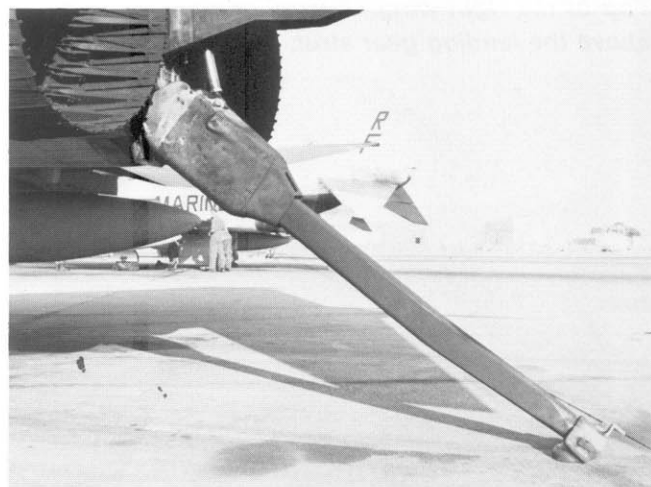
The lowered right speed brake detail showing the actuating cylinder.



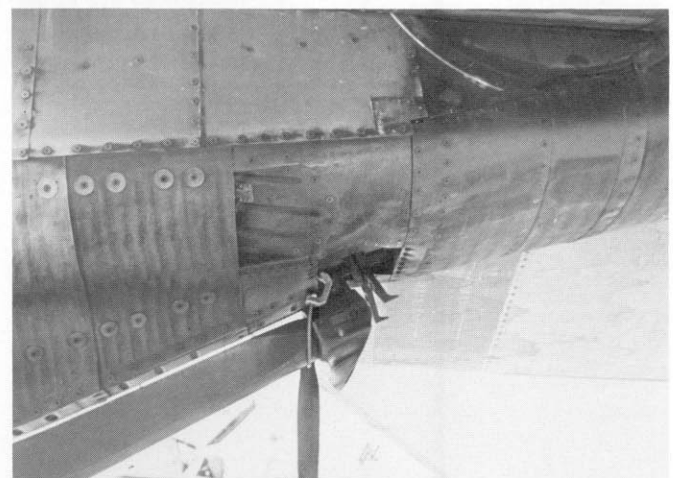
Open panels under the fuselage located between the aft end of the forward Sparrow missile bays. Hydraulic and electrical connections have been made while the aircraft is undergoing maintenance.



Left side view of the tail on the F-4N. F-4Bs were retrofitted with the slotted horizontal stabilizer, and remained when the aircraft were upgraded to F-4Ns.

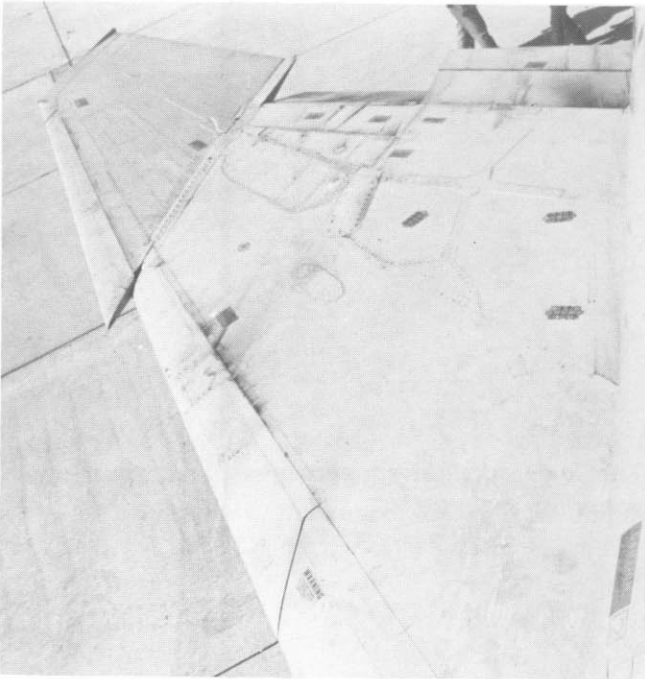


Tail hook in the lowered position. Note the actuating cylinder.



Close-up of the tail hook showing where the hook end is attached to the fuselage. Note the vent next to the hook. A similar vent is on the opposite side.

WINGS



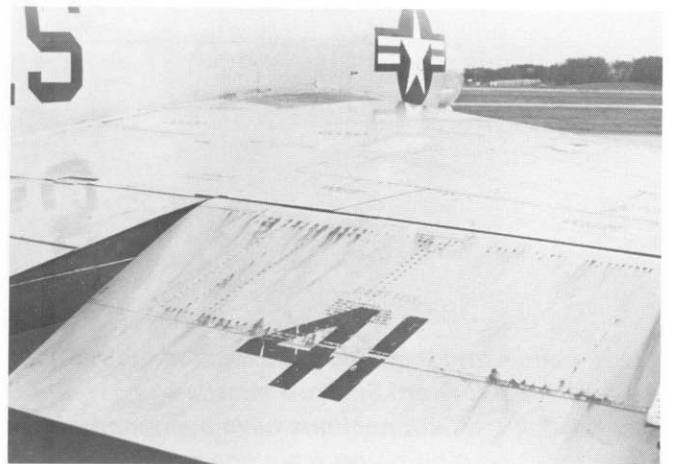
Looking down on the top of the right wing. Careful examination of the photo will reveal panel lines that outline the wheel well on the top of the wing.



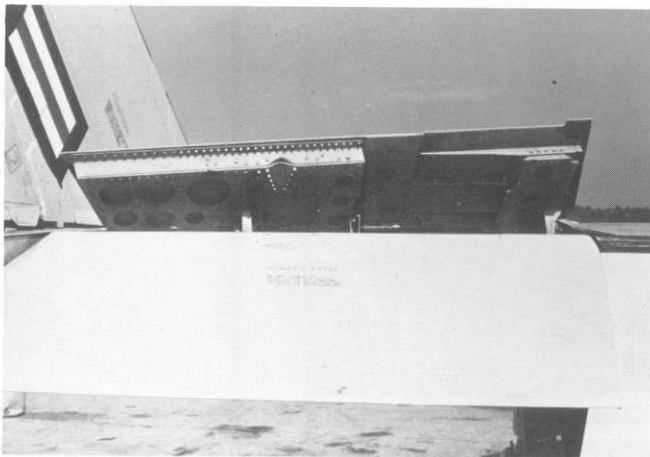
Top of the left wing. The darker gray anti-slip walkway area located next to the fuselage is partly visible in this view.



Looking across the top of the left wing with the spoilers down. This is the thin wing with no bulge in the top.



Top of the right wing. A small bump is located just above the landing gear strut.



Open spoiler on the left wing as viewed from behind.



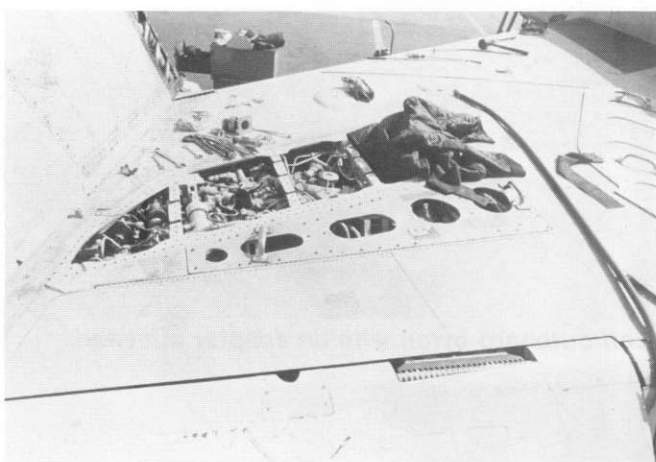
Right spoiler in the open position. These spoilers were originally perforated.



View showing the right wing tip detail and the underside of the right outer wing panel. Note the strengthening strips near the joint at the center of the wing.



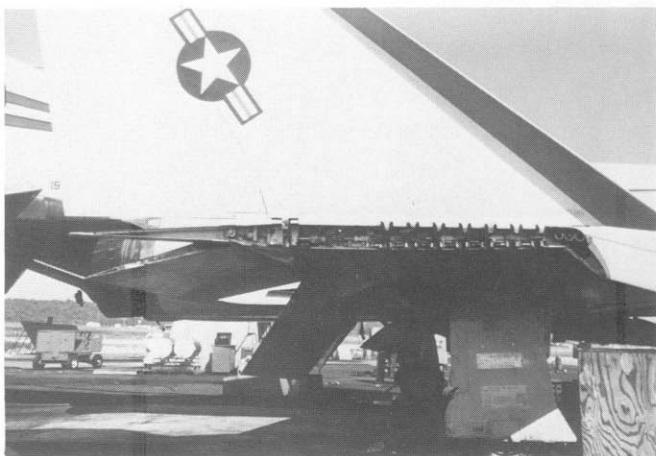
Leading edge of the left wing with the leading edge flaps in the lowered position.



The top of the left wing is shown with panels removed for maintenance.



Right flap from behind. The flap can be lowered to almost a ninety degree angle.

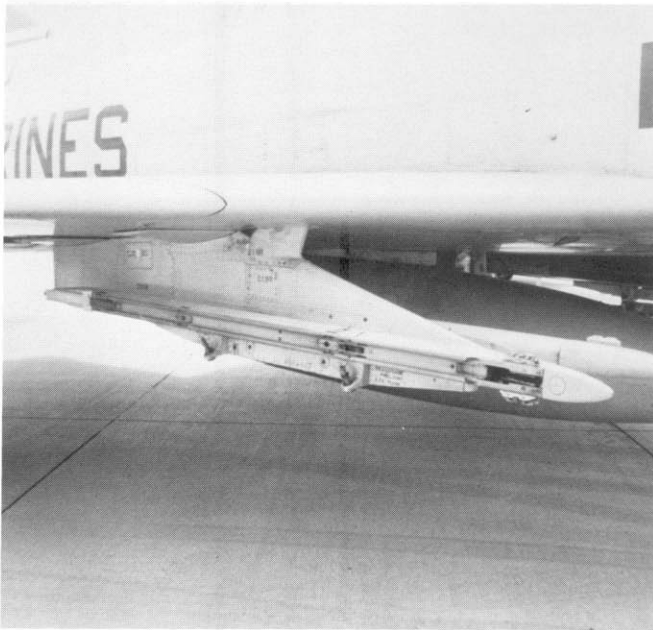


Wing fold detail from the outside on the right wing.



Fold point as seen from the inside. Note the reinforcing plates on the outer panel just above the fold.

PYLONS



The inboard pylons on Navy and Marine Phantoms have a straight leading edge as opposed to the curved style on most Air Force F-4s.



The left inboard pylon on this F-4N has two AIM-9 launch rails shoulder mounted and a triple ejector rack below. A travel pod is attached to the rack.



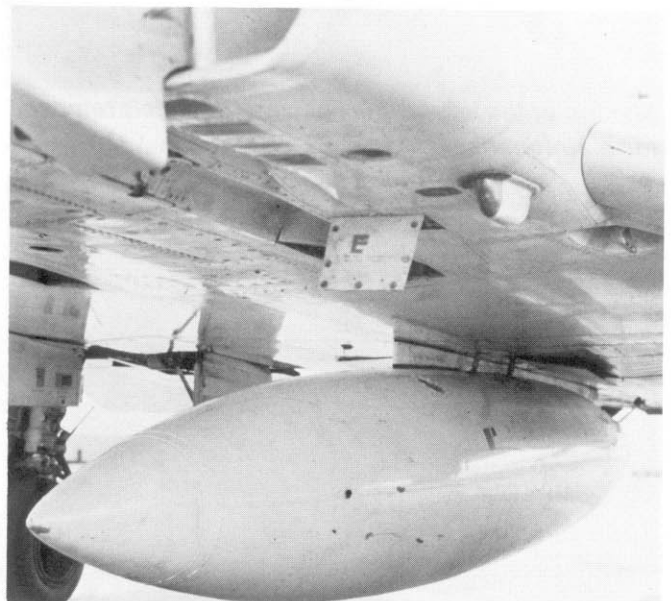
Right outboard pylon and fuel tank combination.



Left outboard pylon with an adapter attached.



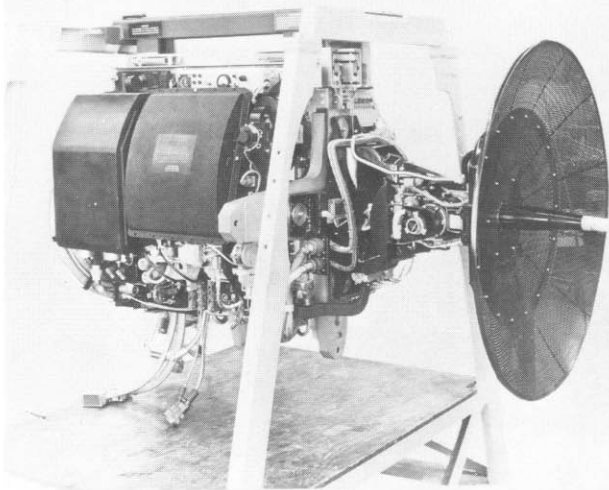
Centerline pylon and tank from behind and to the right. Note the small fins on the tank.



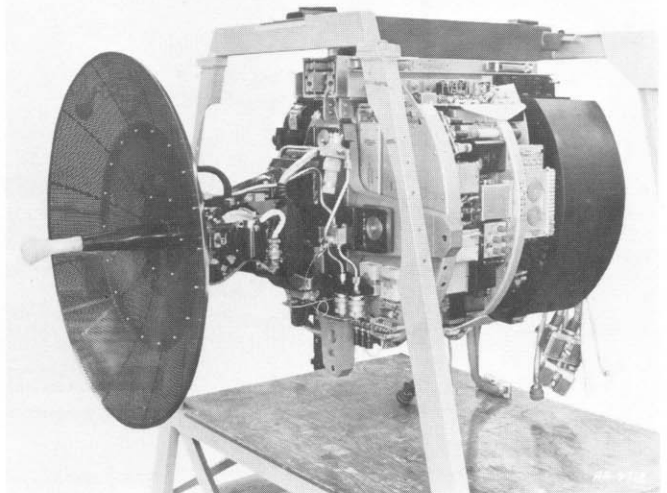
Centerline pylon and fuel tank combination as viewed from the front left.

APQ-72 RADAR

AN/APQ-72 STARBOARD SIDE



AN/APQ-72 PORT SIDE



Above left: APQ-72 radar right side.

(McDonnell Douglas)

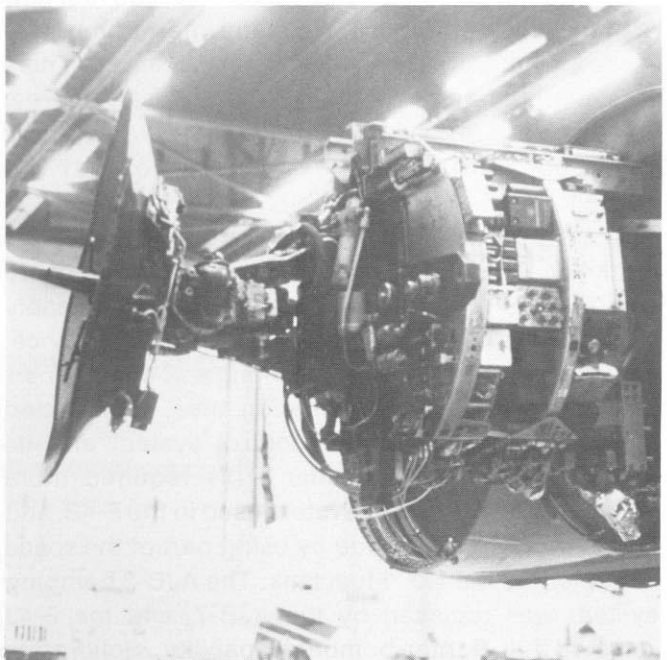
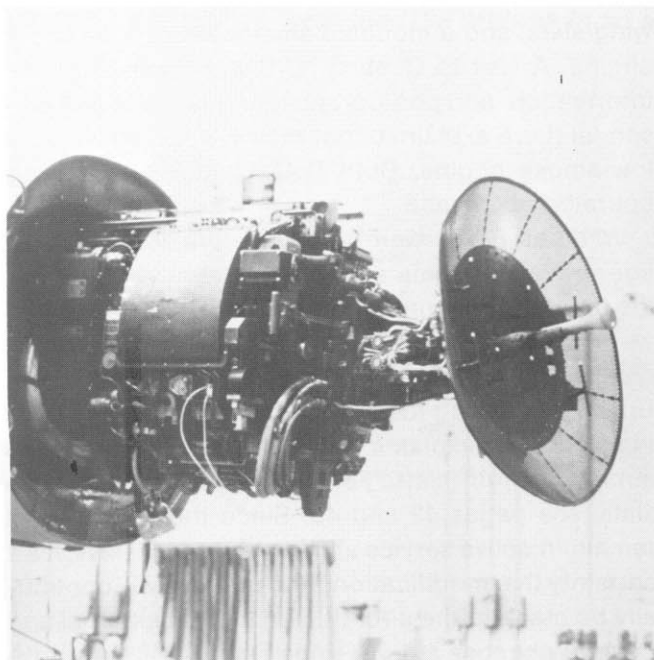
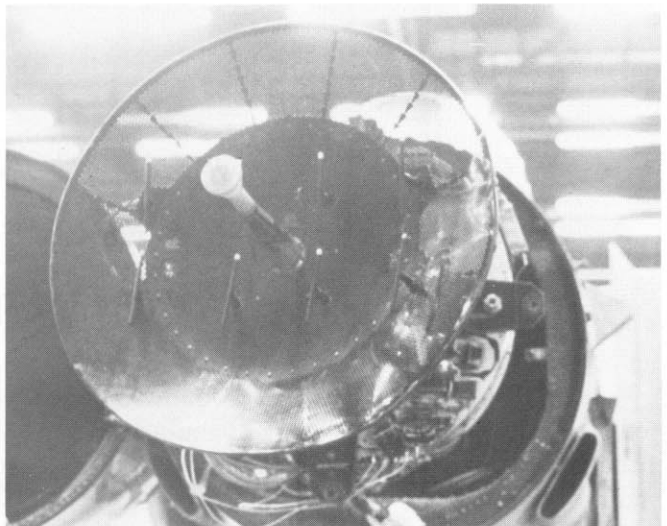
Above right: Left side view of the APQ-72 radar as used in the F-4B and N.

(McDonnell Douglas)

Right: Head on view of the radar antenna.

Below left: Right side view of the radar installed on the aircraft.

Below right: Left side view of the radar pulled out from the nose on rails.



F-4J/S



F-4J, 155861, from VF-31, "Felix the Cat," as photographed April 22, 1979, at NAS Norfolk.

(Linn)

As the Air Force began developing its own versions of the Phantom, it made several changes. While relatively few were made to the first Air Force version, the F-4C, more were made to the F-4D. The Navy studied some of these changes and came up with more ideas of their own that should go into a follow-on version for the Navy and Marines. State-of-the-art advances, particularly in avionics and electronics, permitted more updates to the improved Phantom.

This new F-4 was designated the F-4J, and first flew in June 1966. Although it had many internal improvements, externally it revealed few differences. There was no IR fairing under the nose, and the afterburner nozzles were longer. The thicker tires, wheels, and wings, used on Air Force F-4s, were used on the F-4Js as well.

Some time after the F-4J entered service, ECM antennas were added to the intakes. While these were similar to those fitted to F-4Ns, they were noticeably shorter, thus providing one more external difference.

Internally there were many changes. To better perform its primary air-to-air mission, the F-4J was fitted with the AWG-10 missile control system and its pulse-doppler APG-59 radar. This required more space than the previous system used in the F-4B, and this extra room was made by using part of the space occupied by the No. 1 fuel tank. The AJB-3 bombing system was replaced by the AJB-7, and the F-4J retained full fighter-bomber capability. Solid state

electronics were used in the communications, navigation, and IFF systems, and more advanced ECM gear was fitted. The VTAS helmet sight was likewise included. The engines were upgraded to J79-GE-10 with 17,900 pounds of thrust.

In much the same way F-4Bs were reworked to F-4N standards, F-4Js were reworked to the F-4S configuration. The structural strengthening in this rework gives the aircraft longer life, but the most important changes were the addition of leading edge wing slats, and a modified smokeless or low-smoke engine. A visit to Oceana NAS was made to gather information and photographs for this book, and personnel there explained that their F-4Js also have the low-smoke engine. Both F-4Js and F-4Ss are still operated at Oceana.

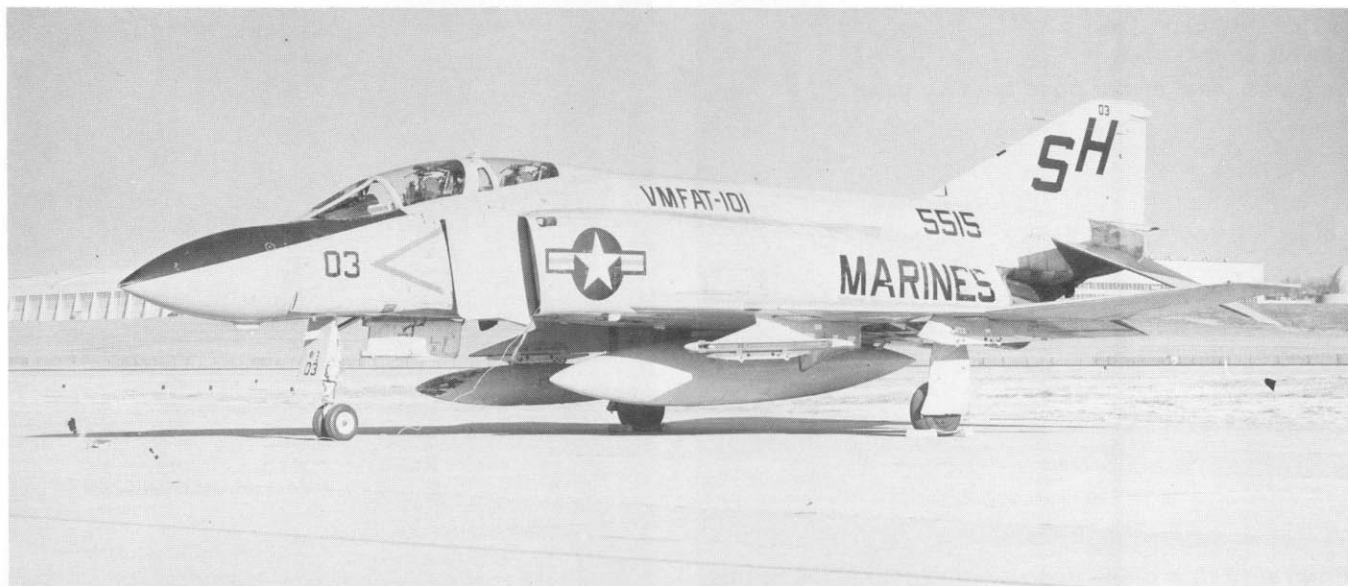
While all F-4Ss were to receive the slats, a shortage prevented some aircraft from receiving them at the time the other modifications were made. The slats were added later, but for a time some aircraft received the designation F-4S, as indicated above the BuNo. on their aft fuselage, but still had not received the slats. This explains why some photos show F-4S aircraft without slats. For a close-up look at these slats, see pages 42 and 43. Since the F-4J and -S remain in active service along with some F-4Ns, it's a certainty that modifications and updates will continually be made to the aircraft, and the last external and internal changes are yet to be seen.



CAG F-4S from the USS Midway and VF-151 as it appeared on June 21, 1982. (McGarry via Cockle)



VF-161 F-4S, 153896, from the USS Midway in an all-gray scheme. (McGarry via Cockle)



An F-4J, 155515, from VMFAT-101 as it appeared on November 22, 1980. (Cockle)

NOSE LANDING GEAR



Nose landing gear on an F-4S as viewed from the front.



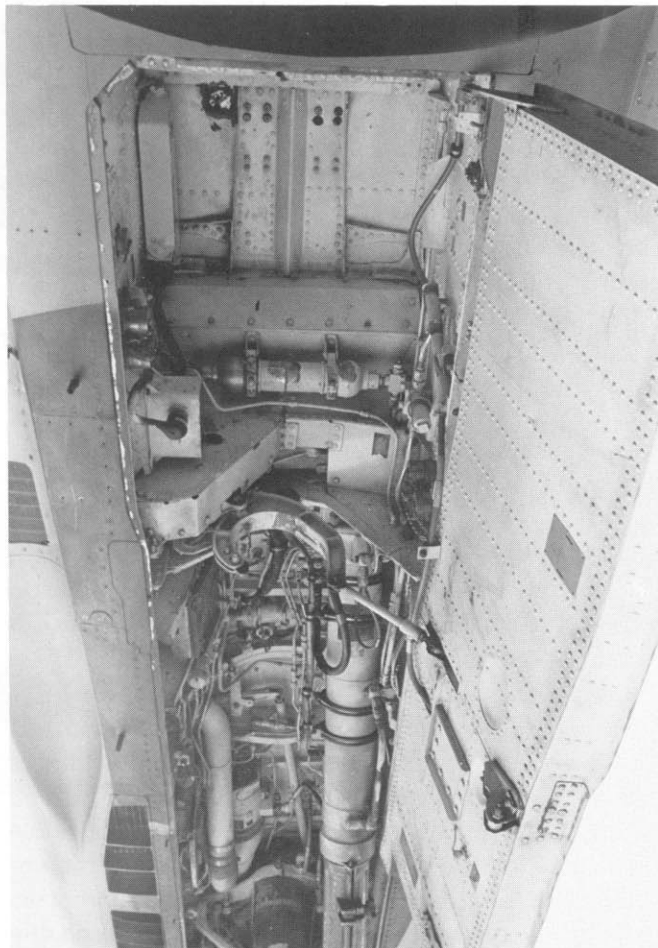
Nose landing gear viewed from the right and set in the extended position as used for catapult launches from a carrier.



Left side view of the nose landing gear.

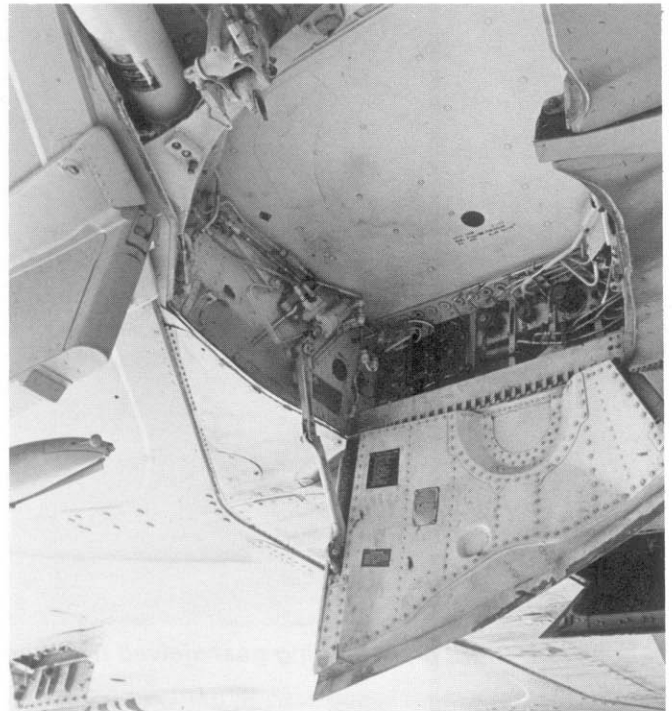


Right side view of the nose landing gear in the normal position.



View looking straight up into the nose gear well.

LEFT MAIN LANDING GEAR



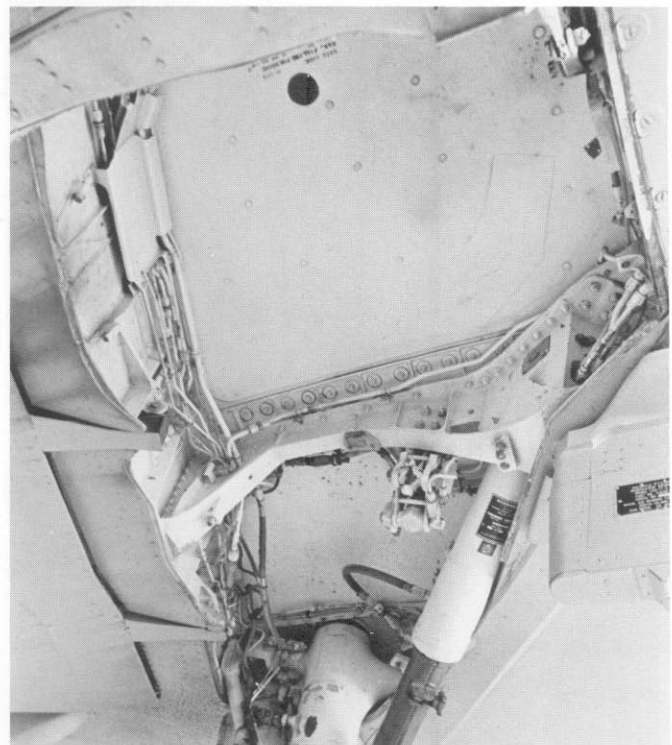
Above left: Inside view of the left main landing gear.

Above right: Left main landing gear well looking in toward the centerline.



Below left: Head on view of the left main landing gear. The thicker tire and the fairings on the main door are evident. Compare this to the thin tire and flat door of the F-4B-N as shown on pages 12 and 13.

Below right: View of the left main gear well looking up and out toward the strut.



RIGHT MAIN LANDING GEAR



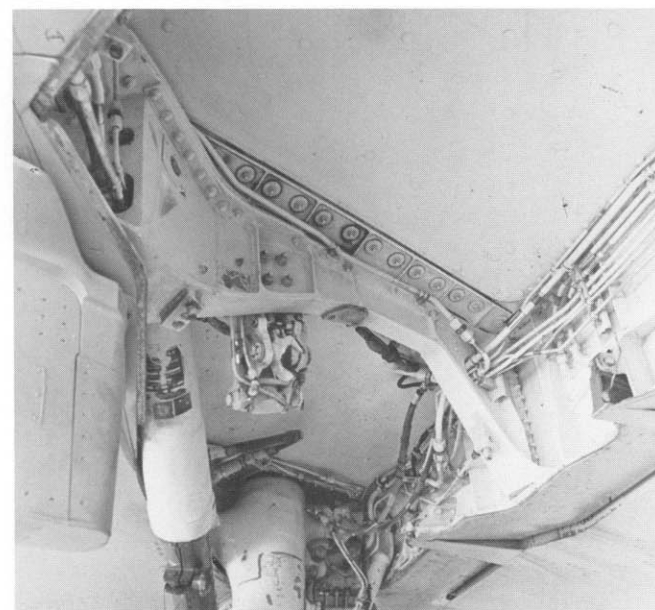
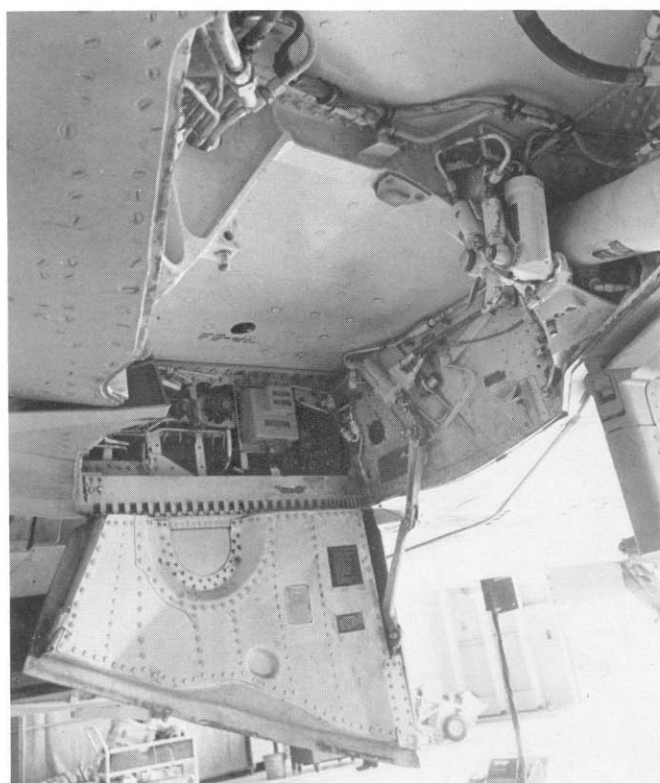
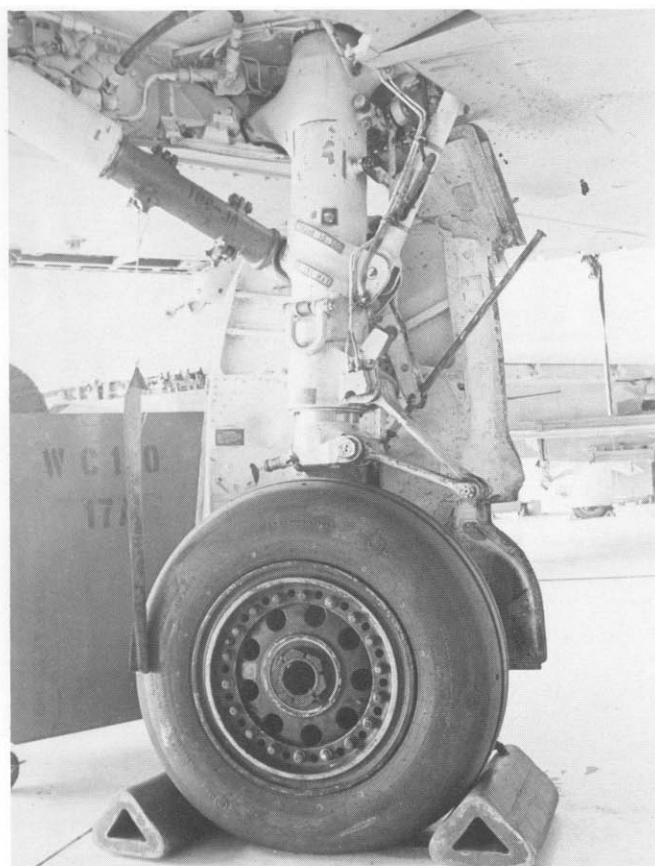
Above left: Right main landing gear viewed from the outside.

Above right: Wheel and strut on the right main landing gear.

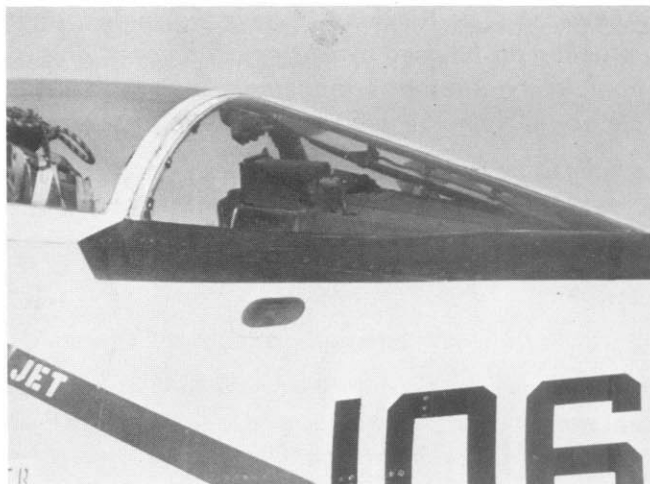
Right: Main wheel and brake as used on the F-4J and -S.

Below left: Right main gear well looking in toward the aircraft centerline.

Below right: Right main gear well looking out toward the strut.



F-4J/S DETAILS



Above left: Open access panel on the left side of the nose.

Above right: This view shows the lowered steps. The formation tape lights were added to F-4S aircraft.

Left: A small red light is located on the right side of the nose. It is used to illuminate the in-flight refueling probe during night refuelings.

Below left: View of the underside of the nose. The ILS antenna is visible, as is the amplifier beacon.

Below right: View of the left underside of the nose showing antennas and cooling intake.





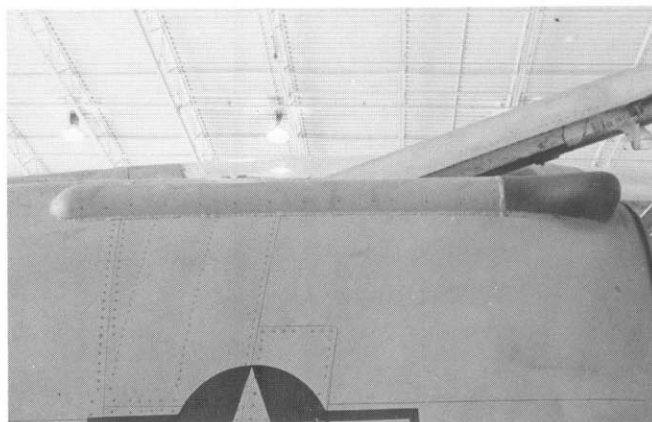
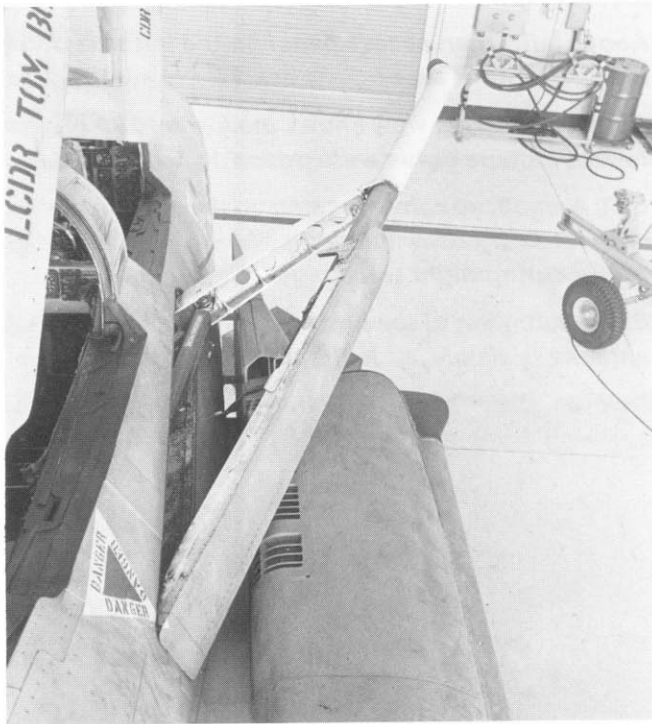
Above left: The F-4J and -S have the same in-flight refueling probe used by all Navy Phantoms. This is a completely different arrangement than the receptacle on the spine as used by Air Force Phantoms.

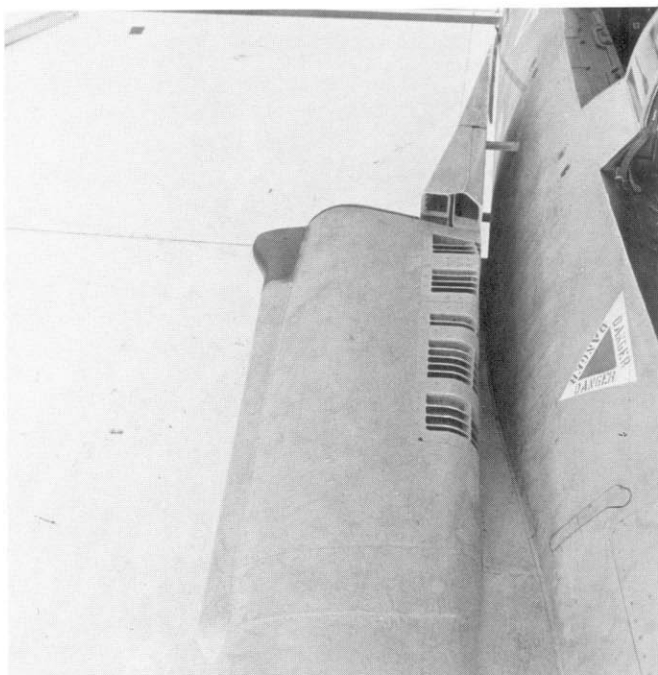
Above right: In-flight refueling probe as seen from the front right. Note the holes in the actuating arm.

Left: In-flight refueling probe as seen from above and behind.

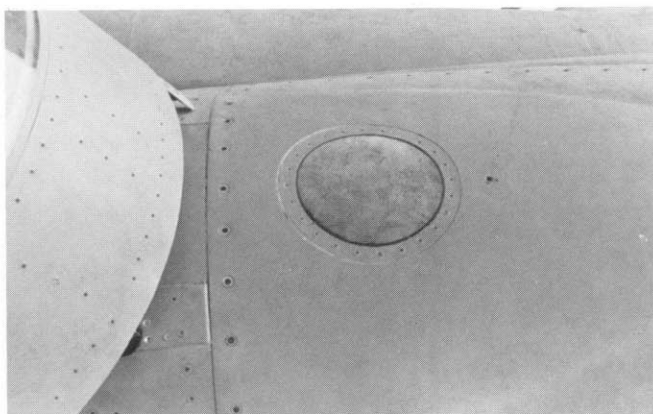
Below left: RHAW antenna on the right intake.

Below right: RHAW antenna on the left intake. These antennas are shorter than the ones used on the F-4N, and were not originally installed on the F-4J.





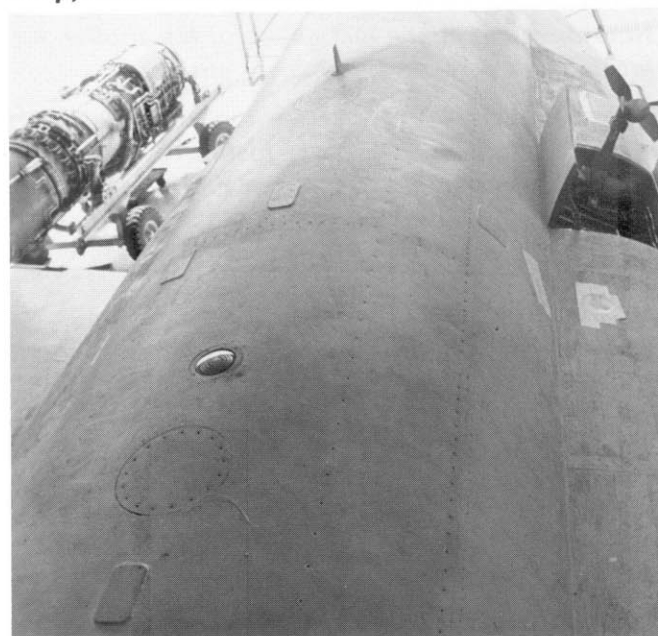
Top of left intake showing RHAW antenna, variable ramp, and bleed air slots.



Circular ADF antenna just behind the rear cockpit on the spine of the aircraft.



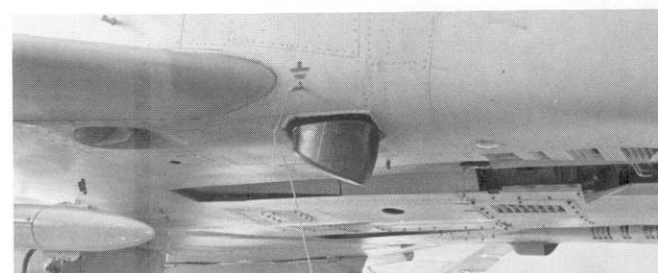
Looking down into the open RAT (ram air turbine) generator. This is located on the left side of the fuselage.



Looking aft along the spine of the aircraft. A small circular formation light is visible.

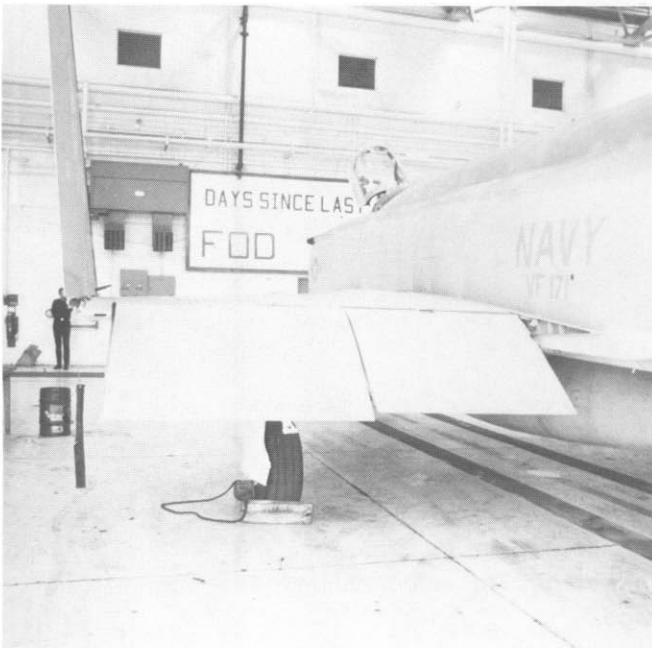
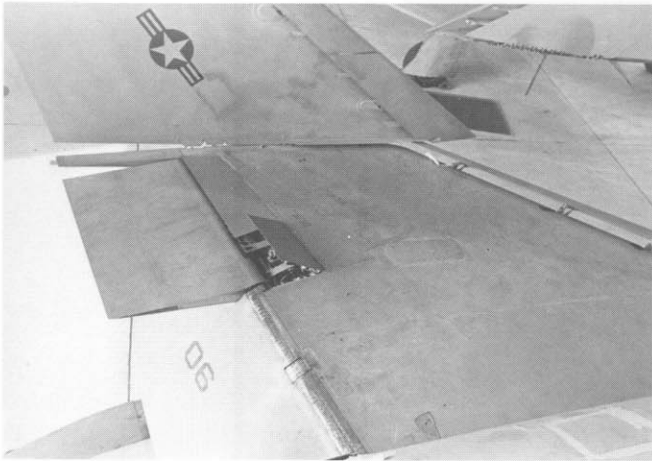


Navy Phantoms have two hooks under the wing roots. These hooks are used to connect the catapult bridle to the aircraft. This is the left hook.



View under the right intake showing a black ECM antenna, the lower bleed air slots, and aft end of the right front missile bay.

WINGS

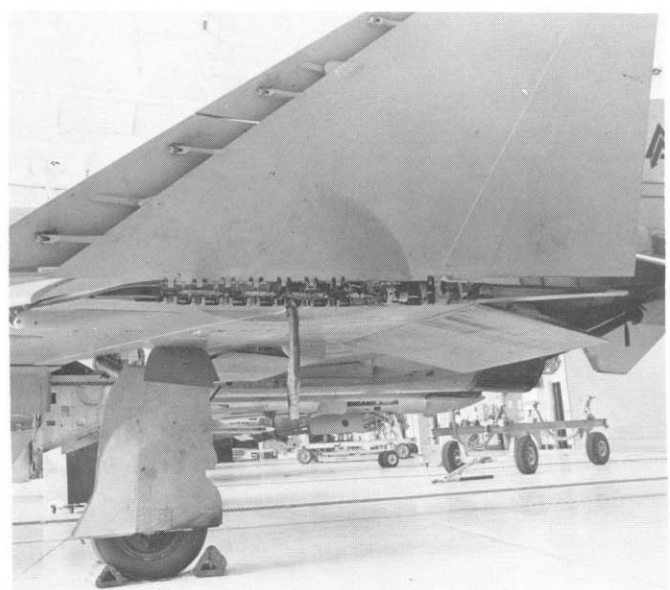
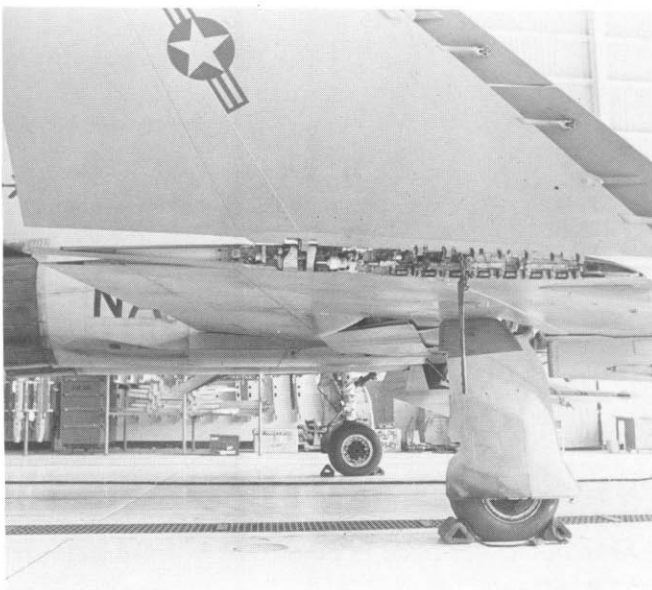


Above left: Looking down on the top of the left wing. Note the small bulge just ahead of the spoiler. It is located just above the main gear strut.

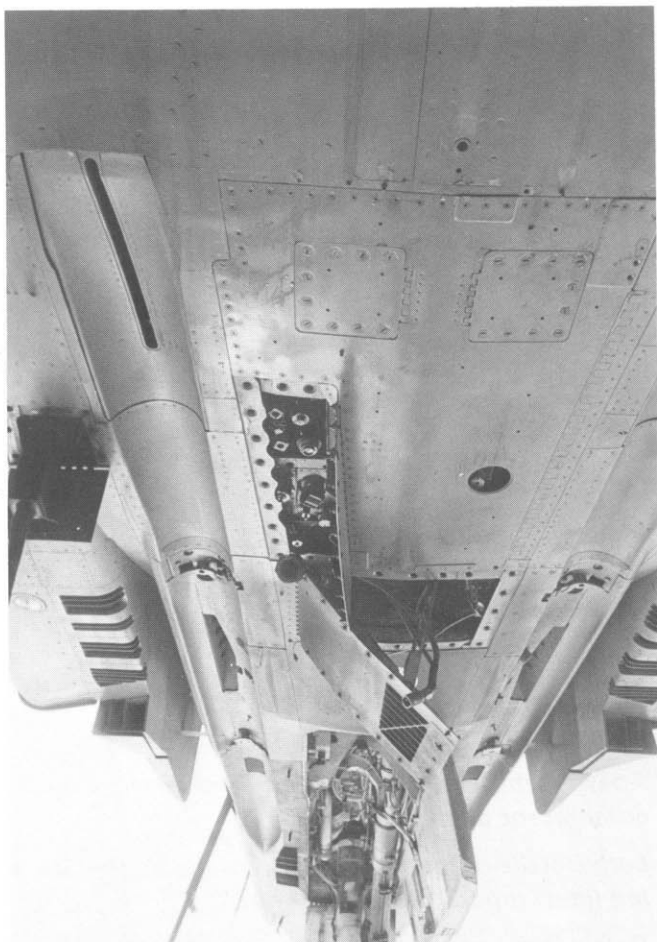
Above right: This view of the top of the left wing shows the bulged area next to the fuselage. This bulge is necessary to accommodate the wider tires.
(Leader)

Left: View of the lowered flap and aileron combination on the left wing.

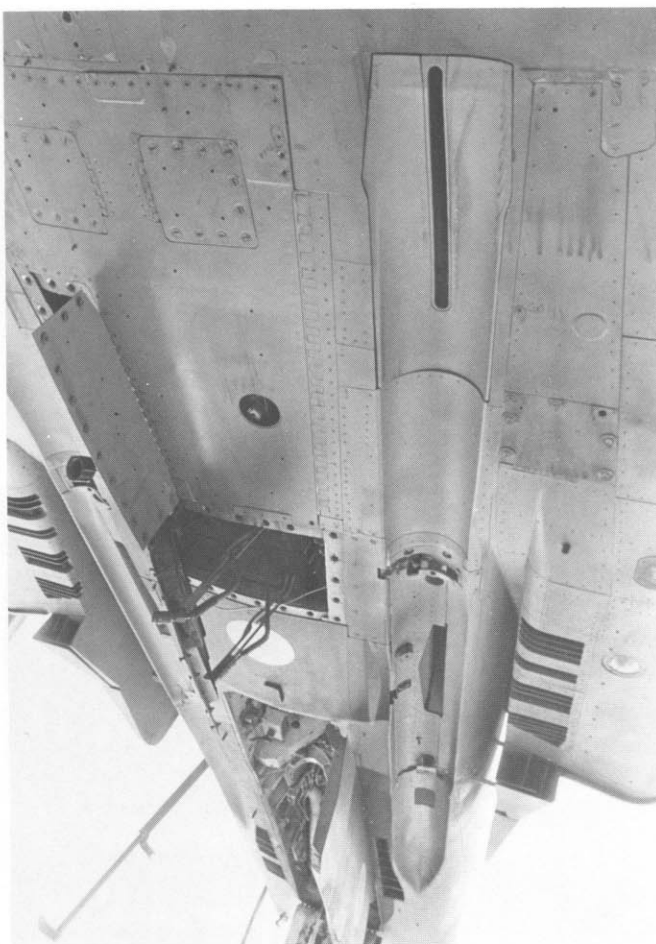
Below left and right: Views of the wing fold on the slatted wing of an F-4S.



MISSILE BAYS



Left front AIM-7 Sparrow missile bay.



Right front missile bay.

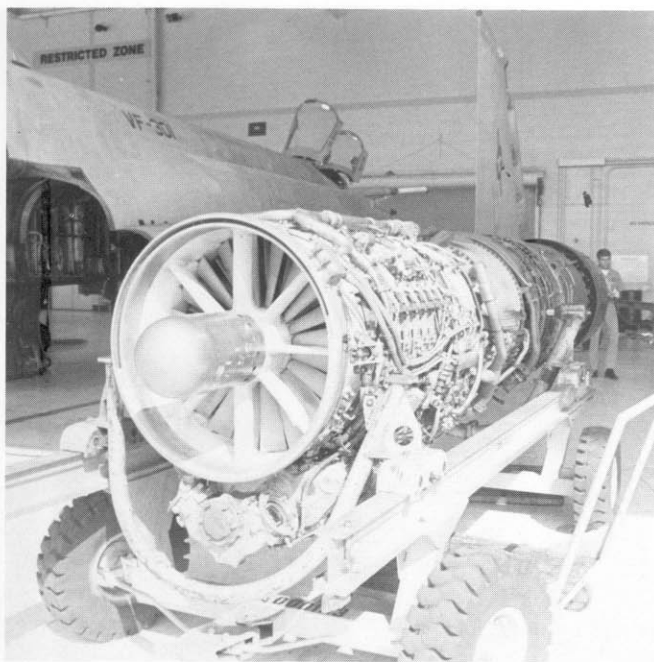
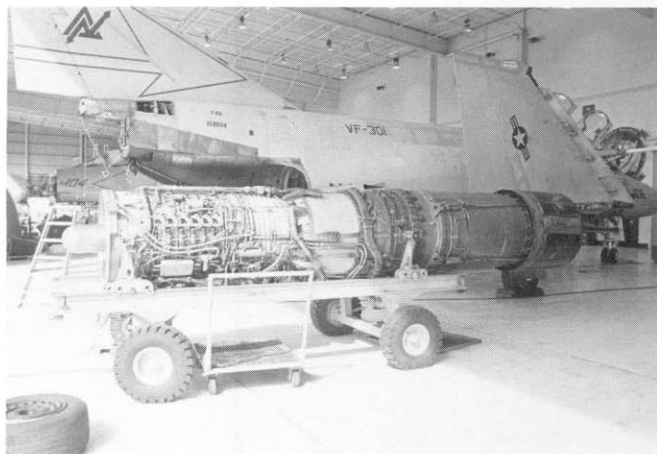


Looking aft at the right rear missile bay. The open aux air door is visible in this view.



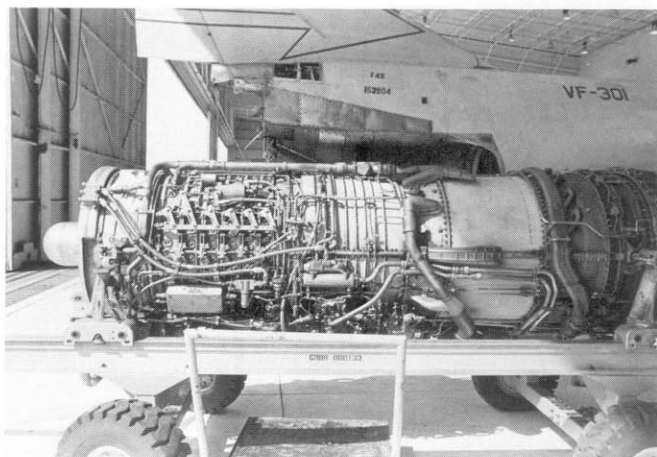
This is the aft left missile bay. Note the close proximity of the inner left gear door.

J79-10 ENGINE AND ENGINE BAYS



Above left: Engine removed from an F-4S.

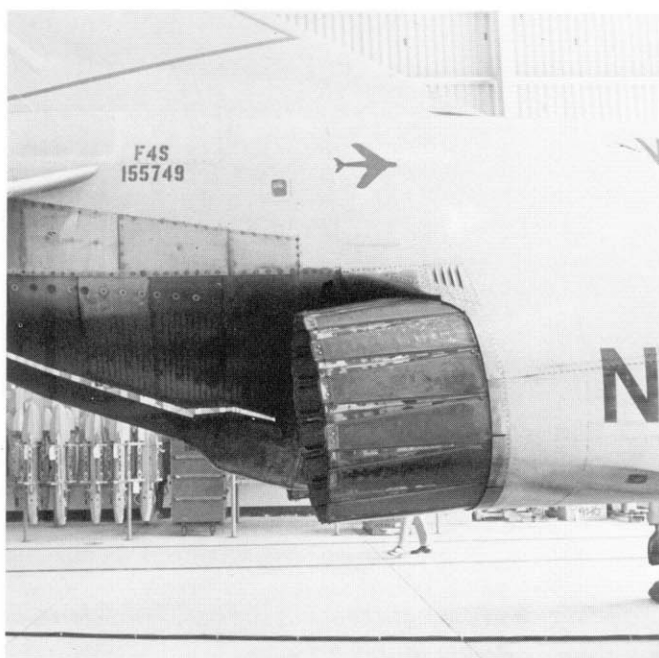
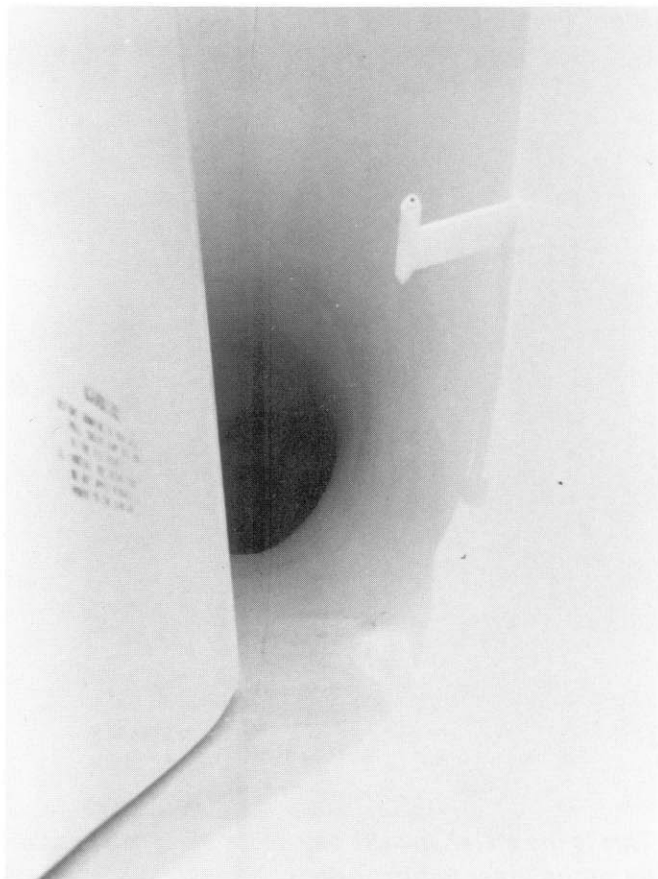
Above right: Front view of the engine showing the compressor blades.

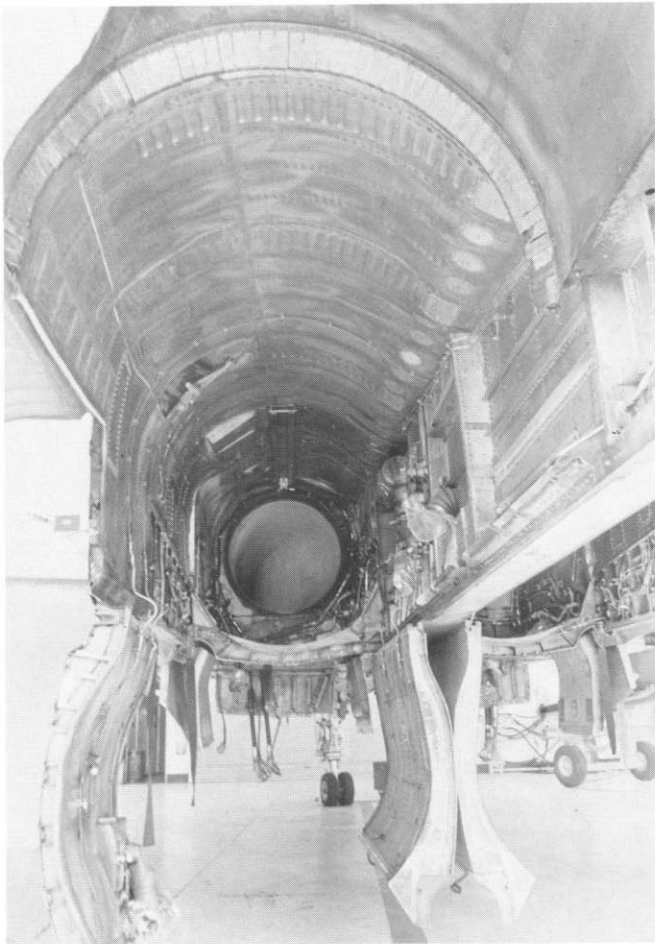


Left: Details of the front portion of the engine showing lines, tubes, and accessories.

Below left: Looking down the left intake toward the engine.

Below right: The version of the J79 used in the F-4J and -S had a longer afterburner can than that used on the F-4B and -N.



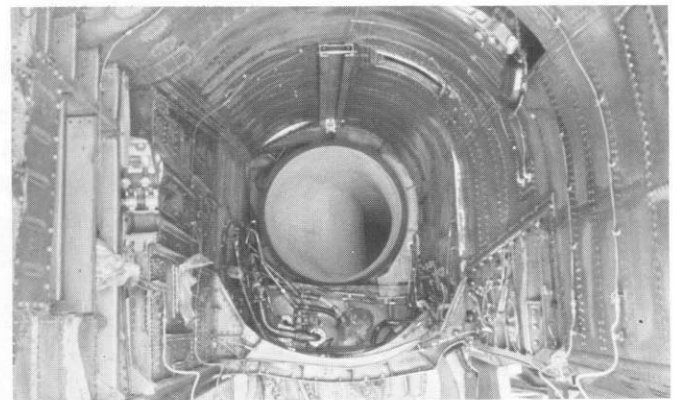


Above left: View looking forward into the left engine bay.



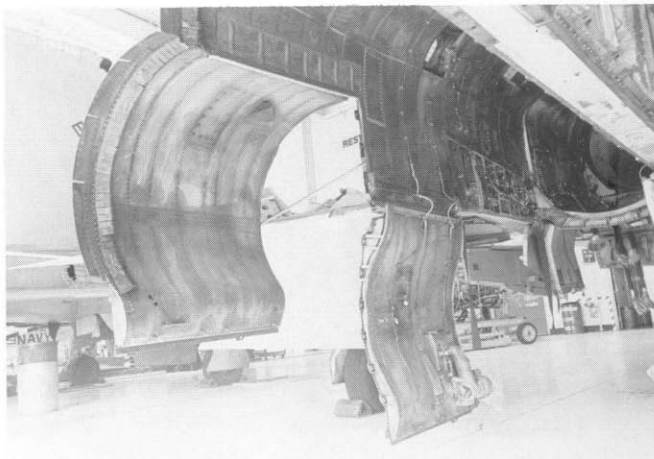
Above right: Looking up and forward into the right engine bay.

Right: Looking into the end of the intake ducting which extends back from the right intake.

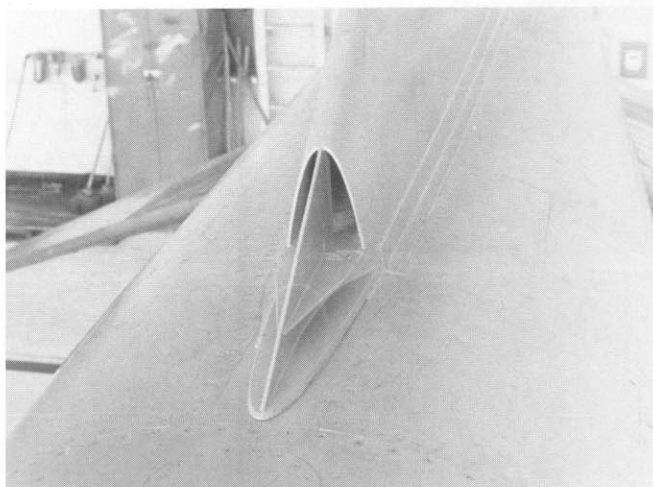
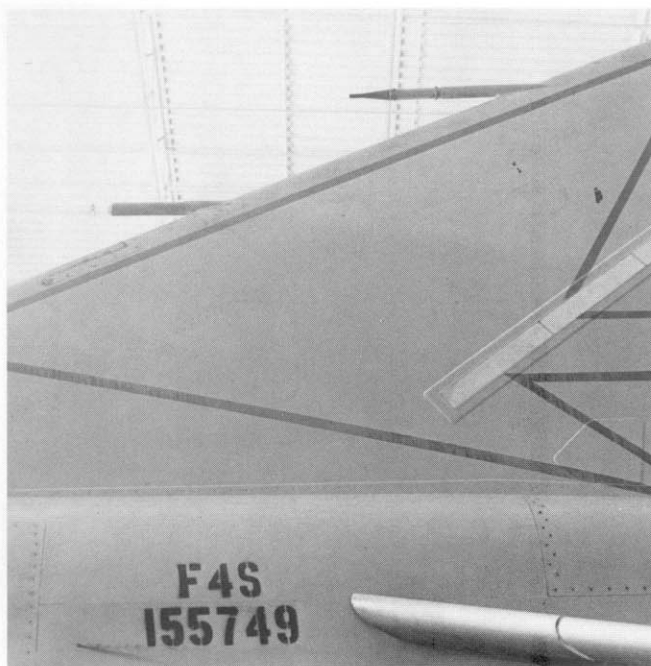
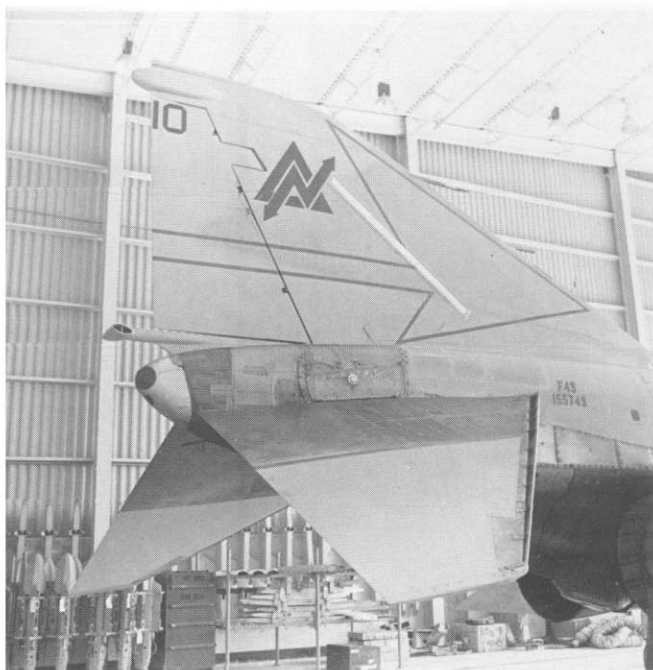


Below left: Open doors hanging down from the left engine bay.

Below right: Doors for the right engine bay.



TAIL DETAILS

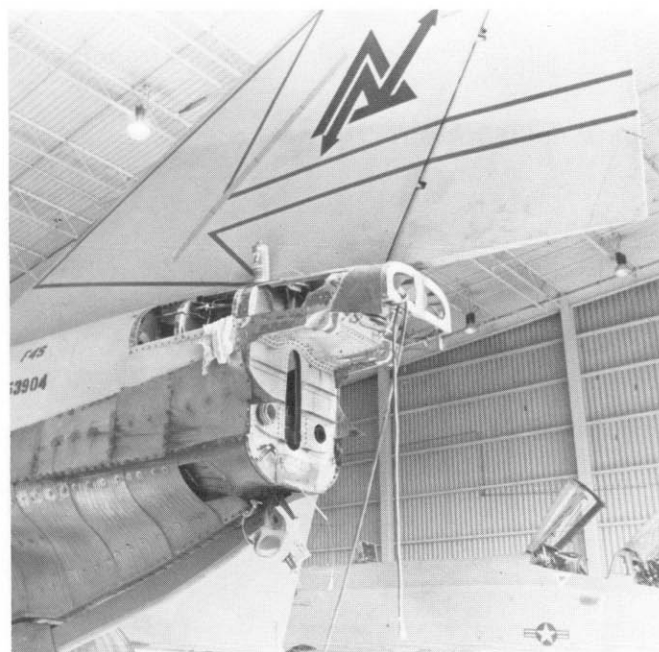
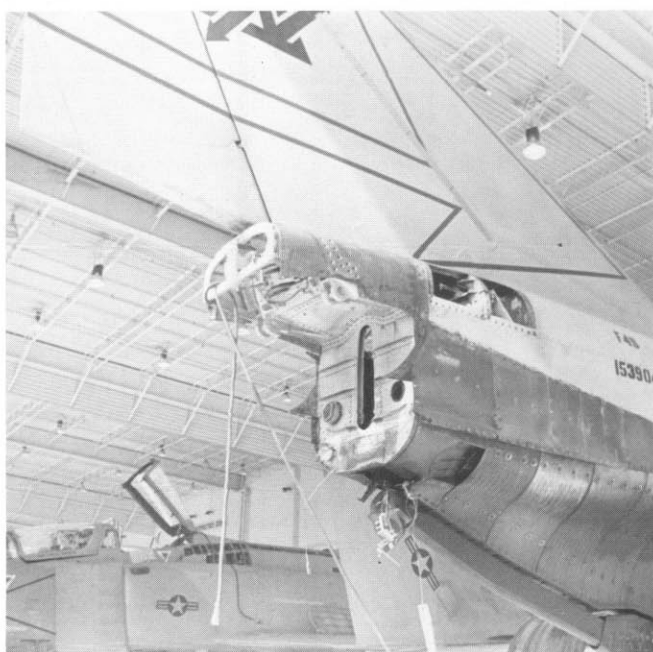


Above left: The F-4J and -S featured the slotted stabilator as shown here. This aircraft is an -S, and has the formation light panel on the vertical tail.

Above right: Probes on the leading edge of the vertical tail.

Left: Intake detail at the base of the vertical stabilizer.

Below left and right: Two views of the tail section with the parabrace housing, fuel vent, and other components removed.



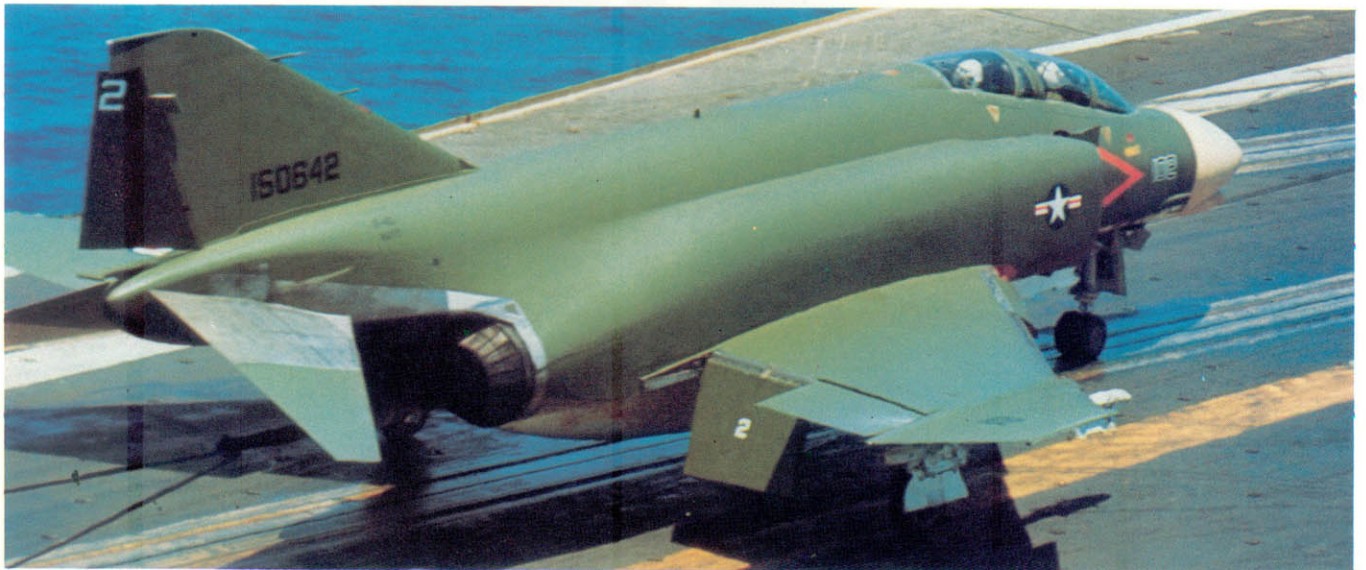
NAVY & MARINE F-4 COLORS



The second of two F-4A-1-MCs, 142260, in-flight. Note how flat the rear canopy is, and also note the long nose probe.
(McDonnell Douglas)



Two early F-4A-4-MCs, 148258 and 148259, belonging to VF-121 (from the Pacific coast) and VF-101 (from the Atlantic) are shown together in flight. A careful study of this photograph will reveal the holes in the spoilers on top of the wings, and the original style ejection seat triangles.
(McDonnell Douglas)



This Phantom in an unusual green paint is a Navy F-4G. Not to be confused with the Air Force F-4G "Wild Weasel," the Navy's F-4G was a modified F-4B with an automatic carrier landing system. The program was short-lived.
(McDonnell Douglas)

F-4B/N COLORS



This beautifully marked F-4B of VF-51 (Screaming Eagles) is a MiG killer, and is the personal aircraft of the commander of Carrier Air Wing Fifteen on the U.S.S. Coral Sea. (Munkasy)



This F-4B, 151504, belongs to VF-302, and was photographed in June 1975.



An F-4N, 150475, from the "Sundowners" of VF-111 shows its bicentennial markings in September 1976. The sharkmouths on all of VF-111's aircraft have become quite popular, and presently adorns the F-14s that the squadron now flies.



A QF-4B, 149420, converted from an F-4B for drone duties. Note the extra antennas on the top and bottom of the nose.

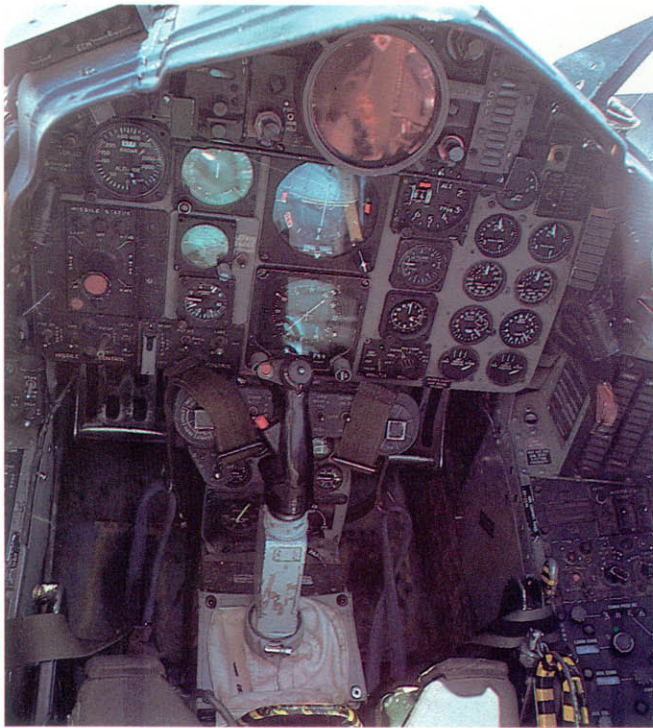


An F-4B, 153006, in the colorful Marine markings of VMFA-351 is shown as it appeared on March 7, 1976. (Leader)

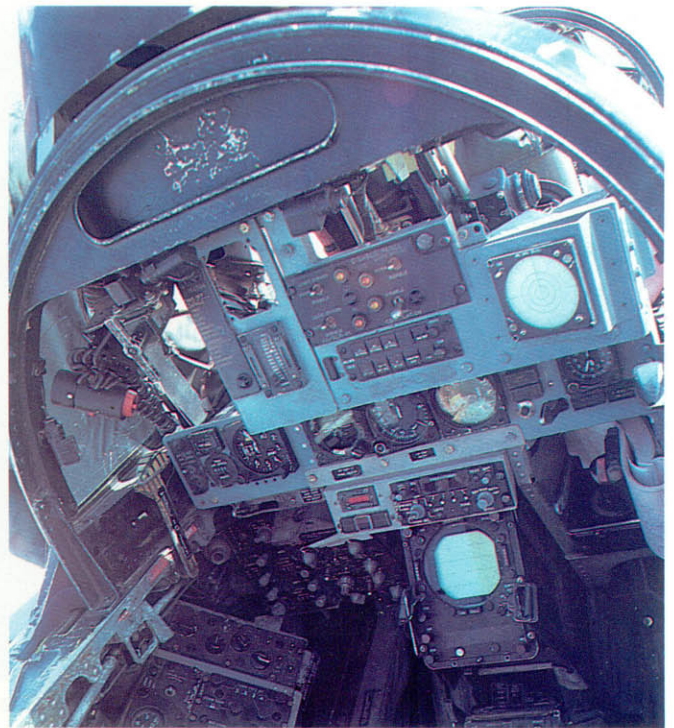


This F-4N, 151449, of VMFA-314 wears the overall gray scheme which marked the beginning of the transition from the colorful schemes carried by Navy and Marine aircraft, to the subdued schemes which now lack even the slightest hint of color. (Spidle)

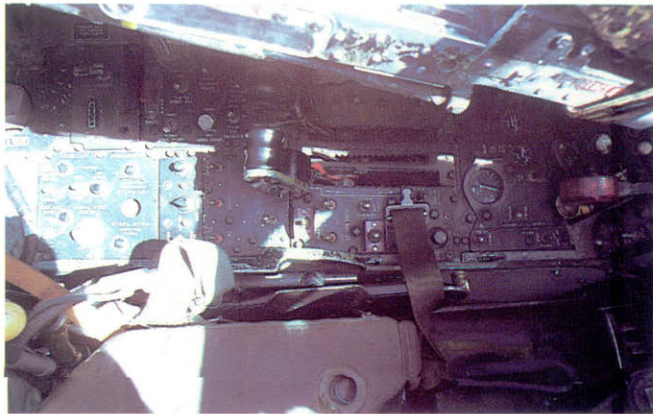
F-4N COCKPITS



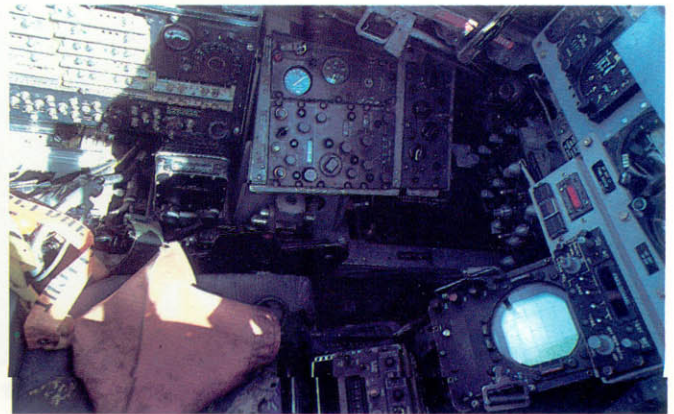
Instrument panel and control column in the front cockpit of an F-4N.



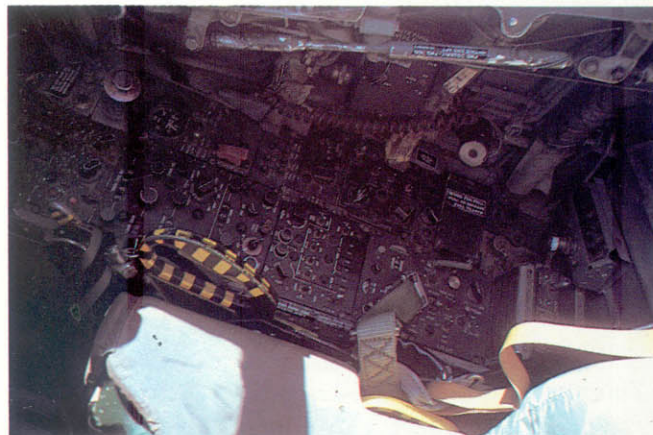
Rear instrument panel in the rear cockpit of an F-4N.



Left console showing throttles in the front cockpit.



Left side of the rear cockpit. There is a small console beside the NFO's left knee, but a vertical panel is located to the left of the seat.



Right console in the front cockpit.



Right side of the rear cockpit. Note the lack of the traditional console in this cockpit.

F-4J/S COLORS



Three Phantoms from VF-74 in flight. Aircraft 101 and 102 are F-4Ss, and 100 is an F-4J. (Linn)



An F-4S from VF-171 is shown in its three-tone camouflage scheme at Oceana NAS.



This F-4J in the all-gray scheme is from VF-103 off of the USS Saratoga. (Spidle)



While the "Black Bunny" from VX-4 has been photographed many times, not so extensively covered is this "White Bunny" which is also from VX-4. (Leader)

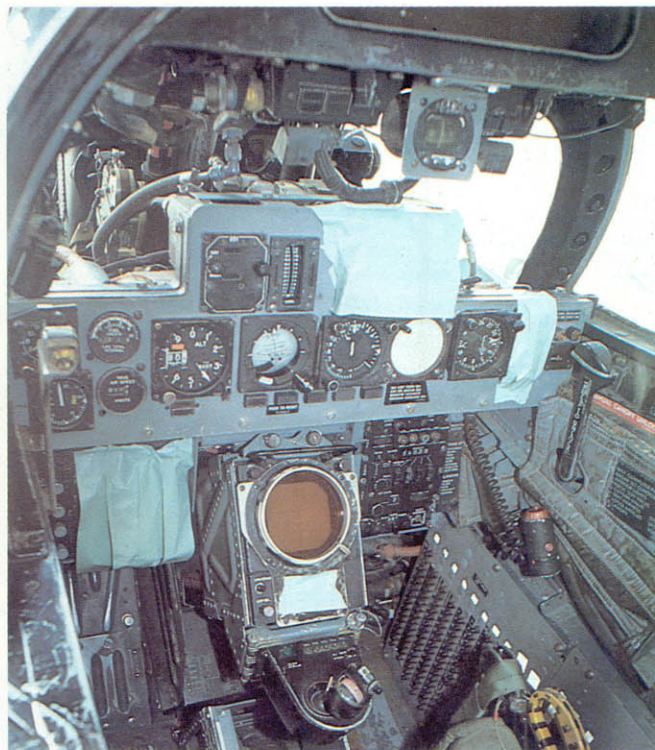


This specially marked F-4J from VF-74 was painted to celebrate that unit's 20th anniversary in Phantoms during 1981. VF-74 was the first squadron to be operational in the Phantom. (Linn)

F-4S COCKPITS



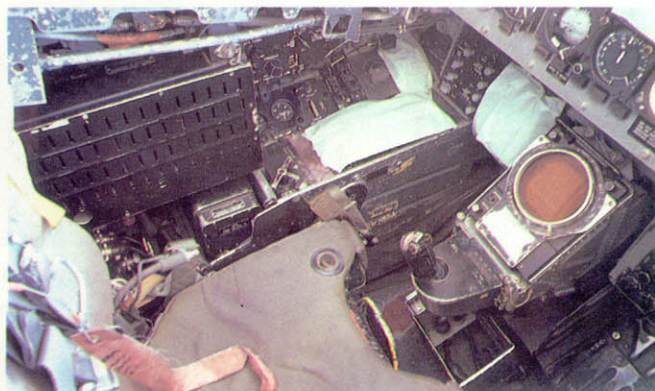
Instrument panel in the front cockpit of an F-4S. The F-4S cockpits are practically the same as those found in the F-4J.



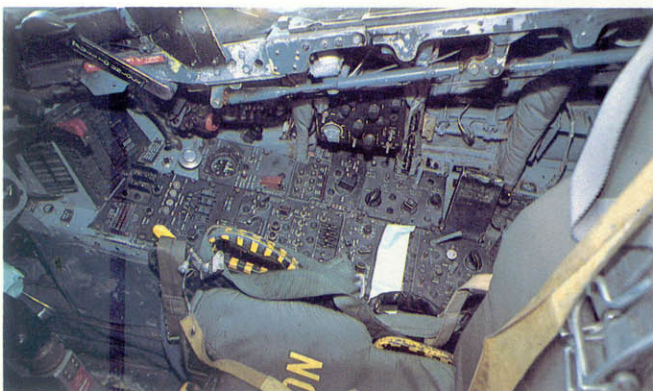
Rear instrument panel in an F-4S. Part of this cockpit is classified and had to be covered before these photographs could be taken.



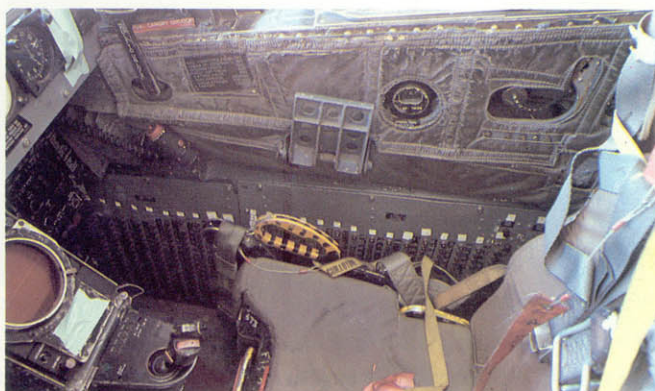
Left console showing throttles.



Left side of the F-4S rear cockpit. There are no throttles or flight controls in the rear cockpits of any Navy or Marine F-4s. Some classified areas are covered.



Right console detail in the front cockpit.



Right side of the rear cockpit. Again, note the lack of a console in the rear cockpit.

RF-4B COLORS



RF-4B, 151978, shown with the gold fox on a green tail. Except for a few bicentennial schemes, this represents about the most color ever carried by an RF-4B. (Leavitt)

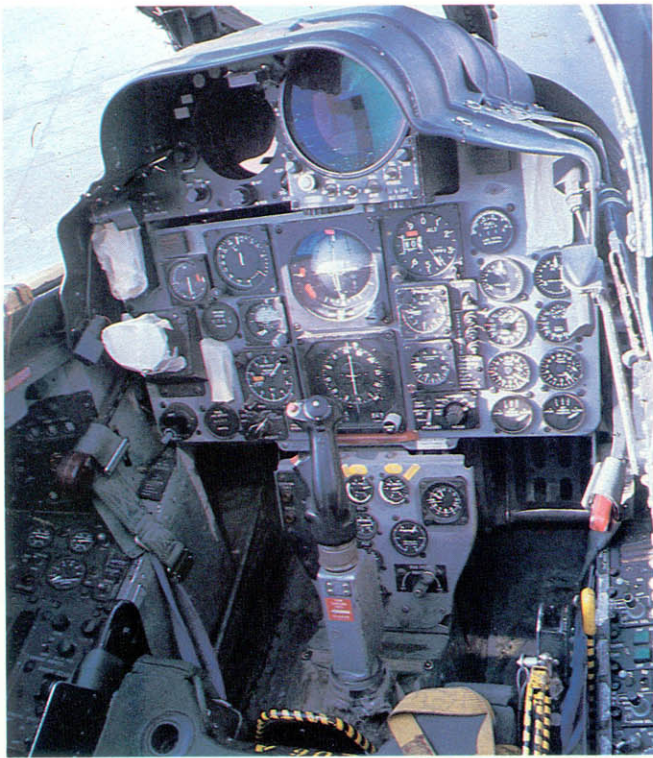


RF-4B, 153107, in an all-gray scheme and black markings. This photo was taken at El Toro in January 1983 after most aircraft had been changed over to the more subdued scheme.

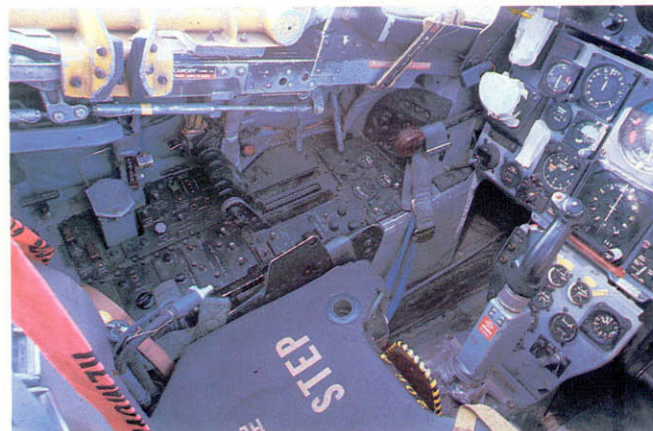


This RF-4B, 151979, also photographed in January 1983, shows the three tone gray scheme to good effect. The RF and lightning bolt are on the tail, but the fox is no longer used. Some of VMFP-3's aircraft still carry the Phantom figure on this scheme. Several variations of this figure are carried, such as the one seen on the tail of the aircraft in the middle photo. No three aircraft carried the same style of markings and camouflage in January 1983.

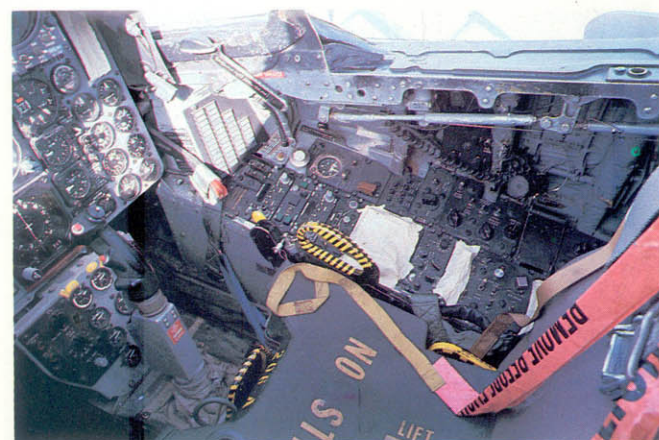
RF-4B COCKPITS



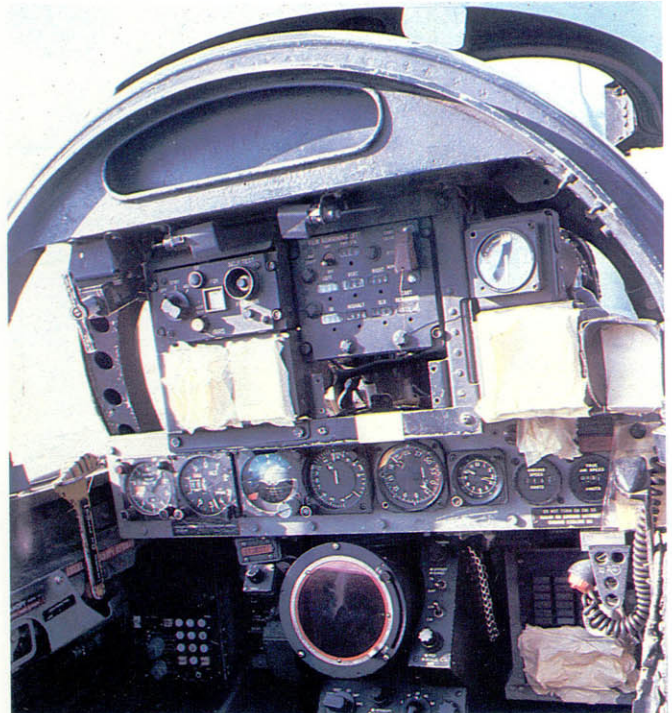
Front instrument panel in an RF-4B. Note the twin scopes at the top of the panel.



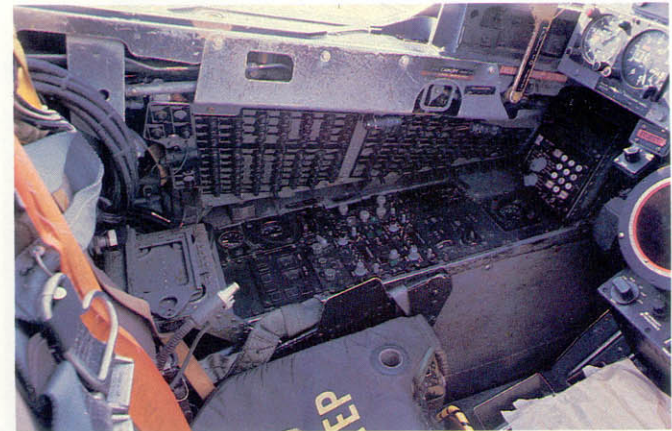
Left console showing throttles.



Right console in the front cockpit of an RF-4B. Some classified areas are covered with tape.



Instrument panel in the rear cockpit. Several areas, including the area below the radar scope had to be covered for security reasons.

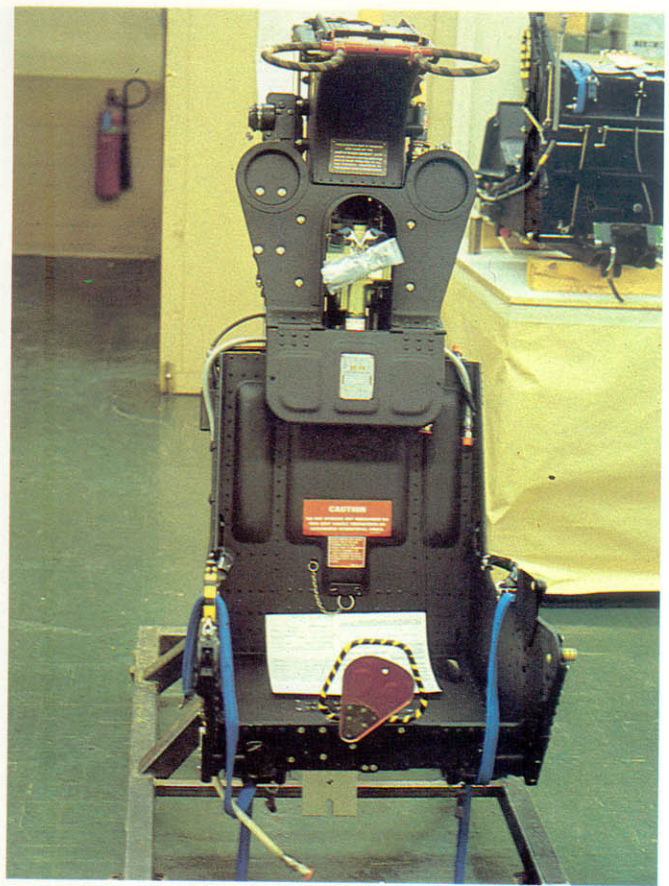
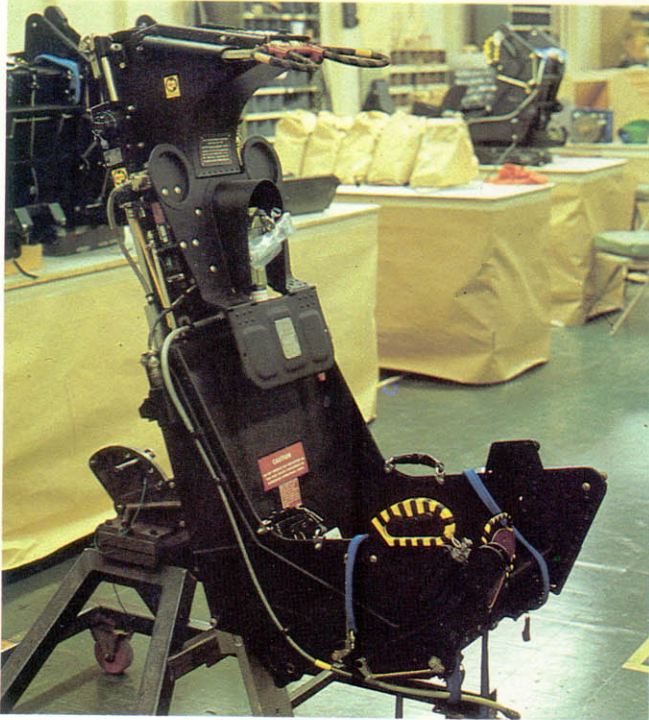


Left console in the rear cockpit of an RF-4B.



Right console in the rear cockpit. Unlike the other Navy and Marine Phantoms, the RF-4B does have traditional consoles in the rear cockpit.

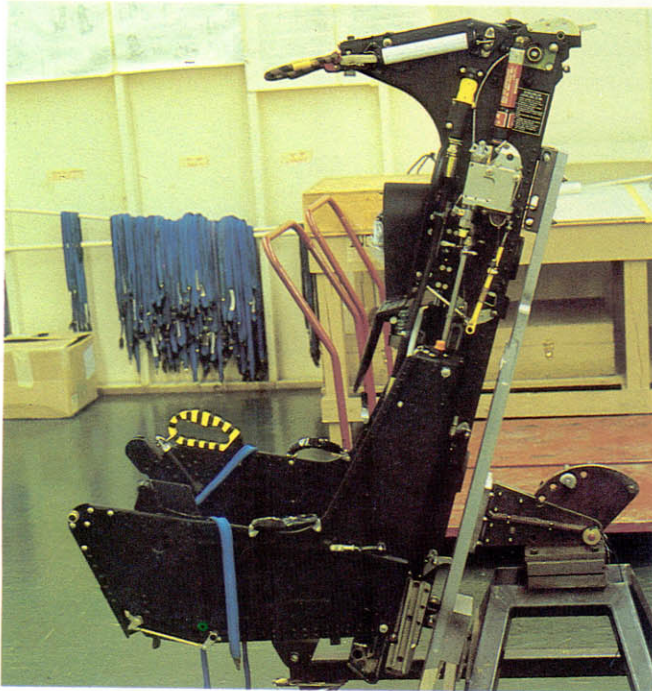
EJECTION SEAT DETAILS



Above left: Right side view of the Martin-Baker ejection seat as used in Navy and Marine F-4s.

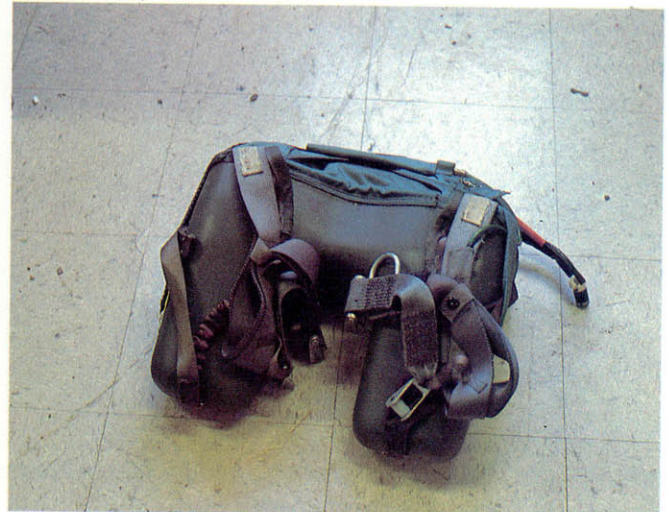
Above right: Front view without the parachute and survival pack in place.

Left: Left side view.



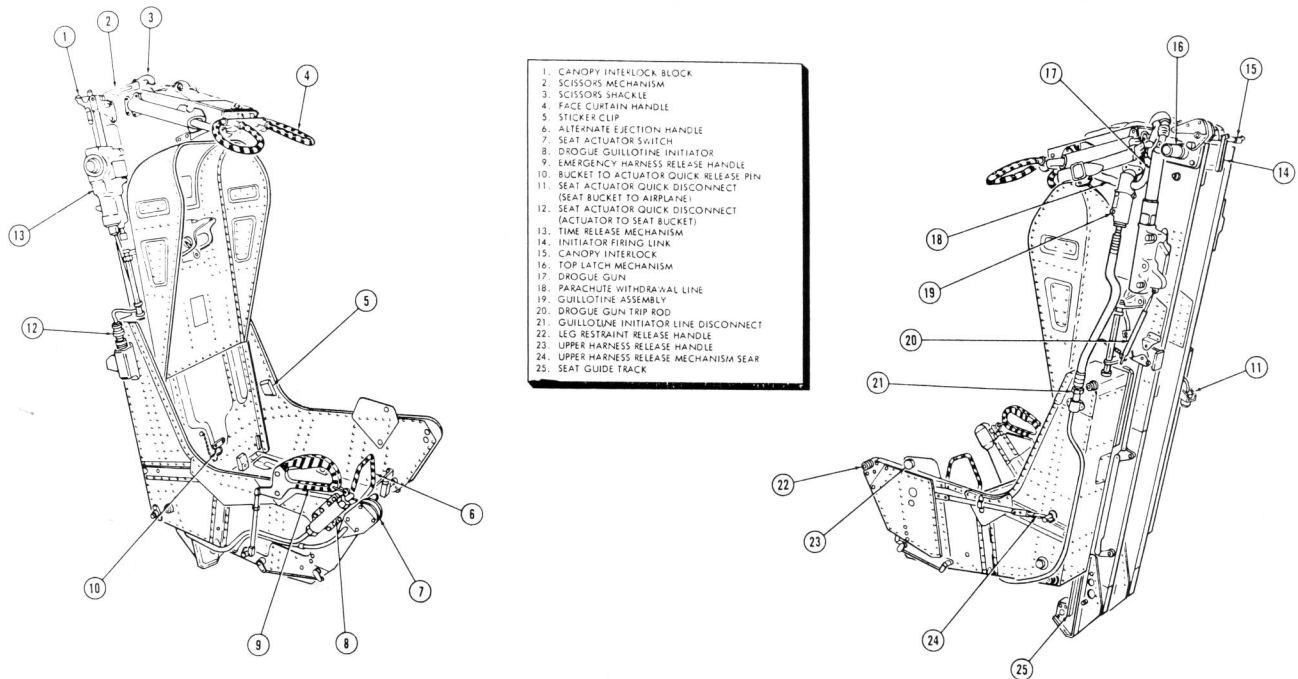
Below left: The survival pack/seat cushion packed and ready for installation on the seat.

Below right: The parachute pack, which goes right behind the pilot's head, is seen here ready for installation on the seat.

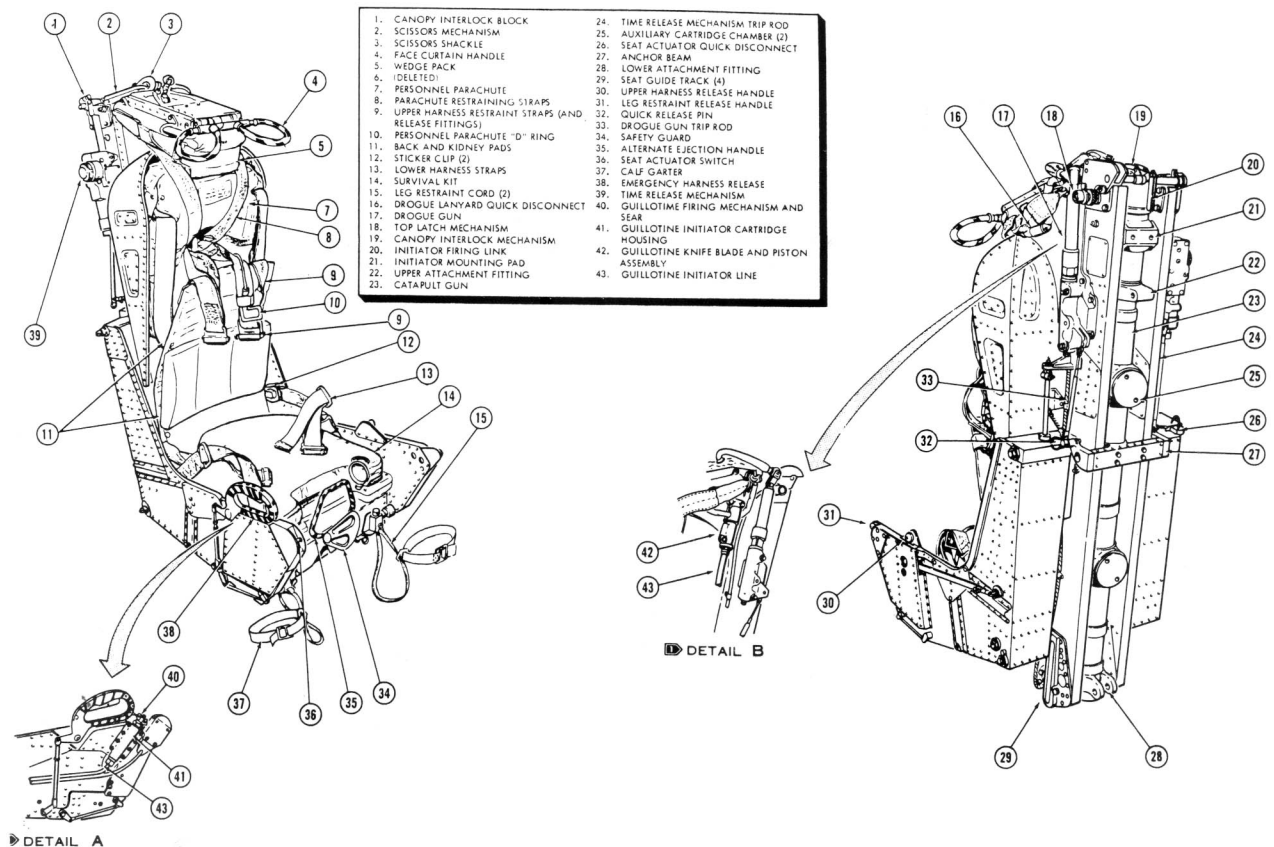


EJECTION SEAT DRAWINGS

BASIC SEAT



PACKED SEAT



Courtesy of the U.S. Navy

F-4S SLATS



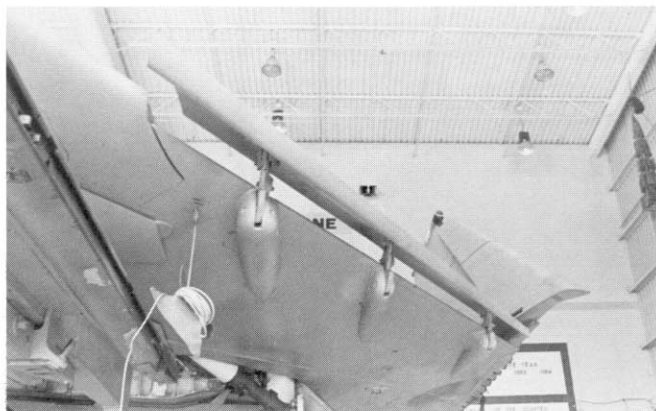
Looking out toward the slat on the left outboard wing. Carefully note the wing tip detail. This photo makes an interesting comparison of the top view of this slat and the bottom view of the slat on the right outboard wing on the next aircraft in line.



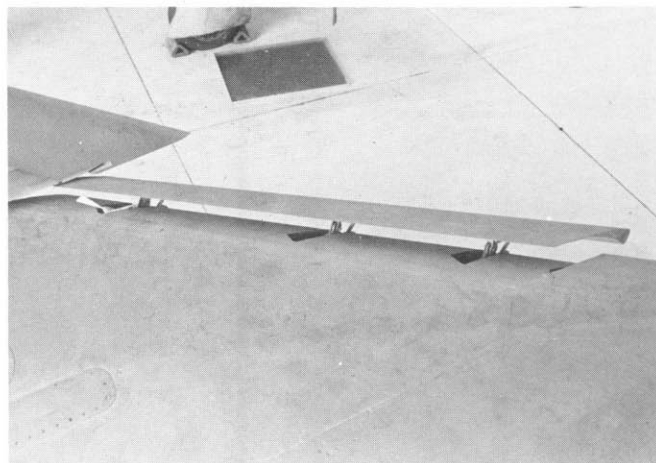
Underside view of the left outboard slat.



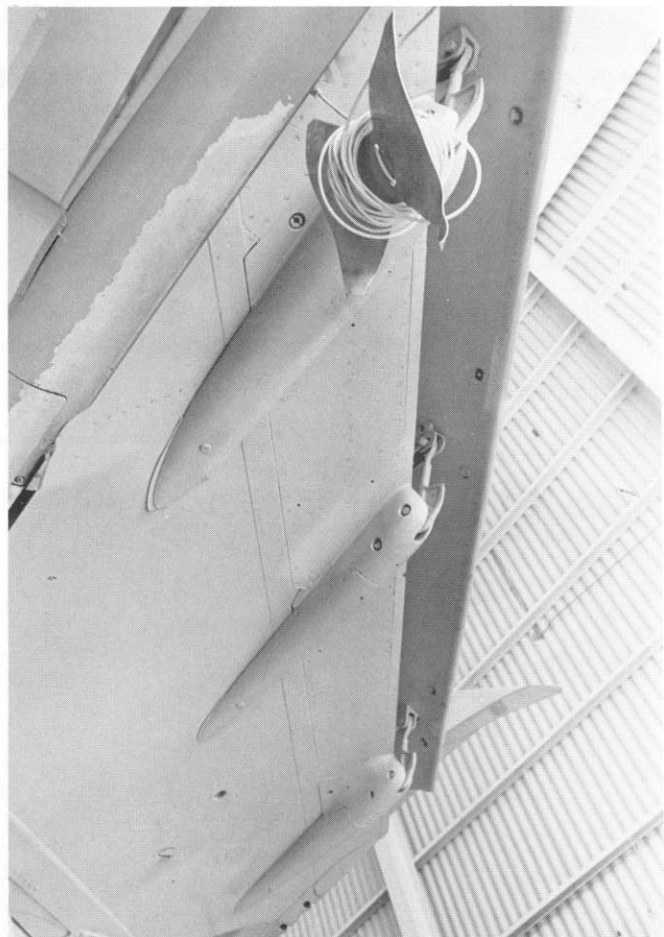
This view shows the cross section of the inboard left slat to good effect.



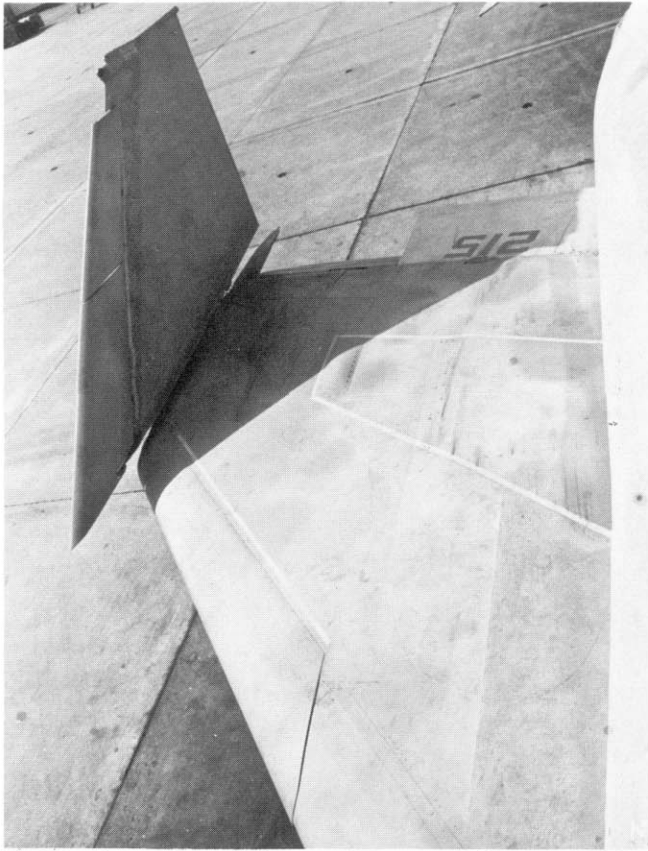
In this photo, the left inboard slat is shown from below and in front. The slat is in the extended position, and the resulting gap between it and the wing is clearly visible.



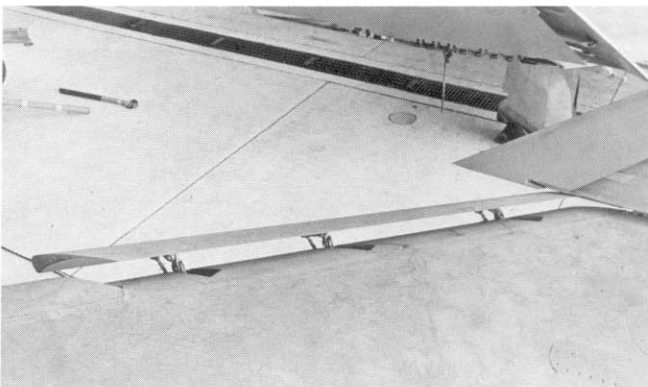
The extended left inboard slat is shown in this photo from above and behind.



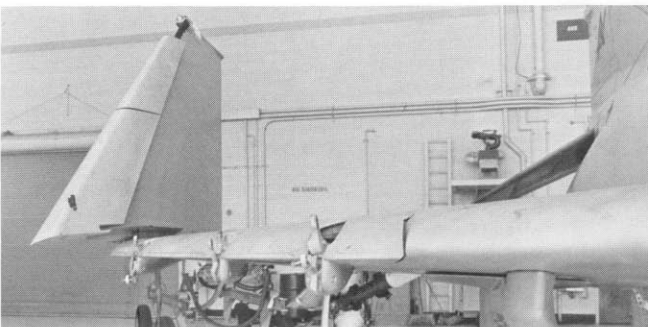
View looking straight up at the three actuator fairings for the left inboard slat.



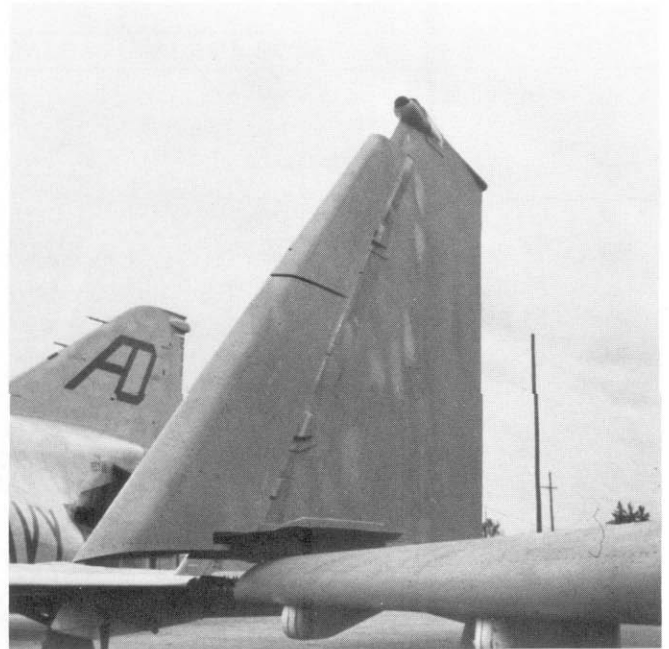
Right slats viewed from above and in front. The inboard slat is retracted, while the outboard slat is extended.



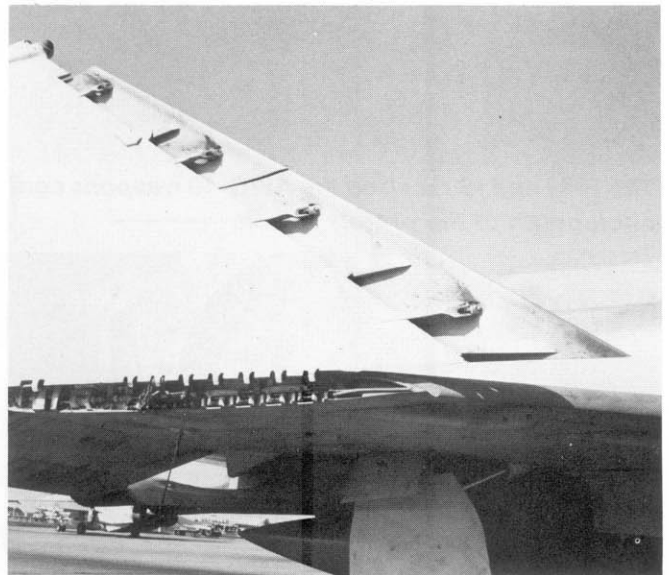
Right inboard slat in the extended position as seen from above.



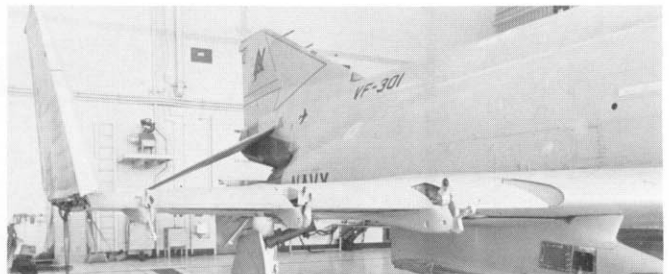
Front view of the right wing with the inboard slat removed.



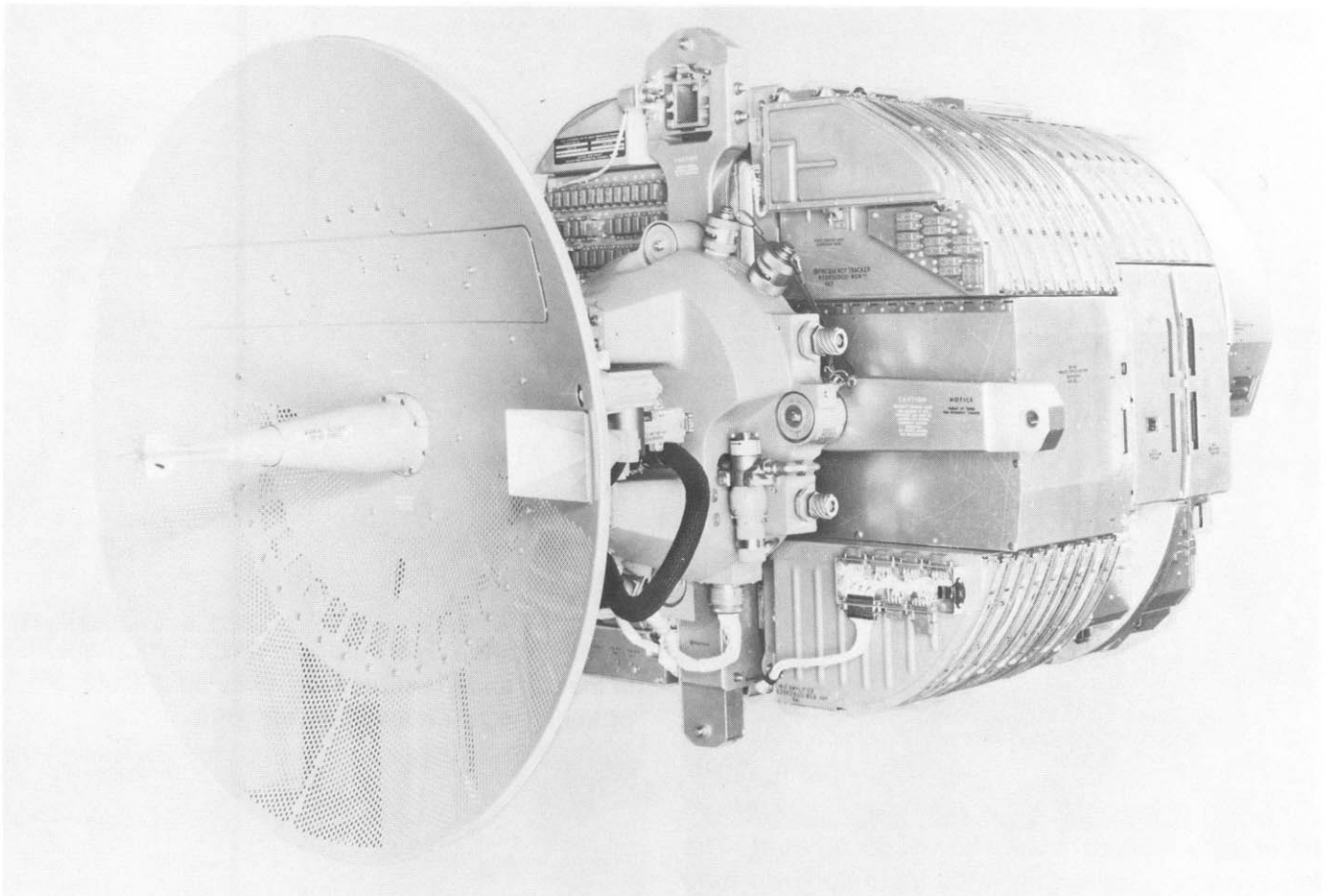
Close up of the right outboard slat. Note the small cut in the slat and the short wing fence on the folded part of the wing just above the fold joint.



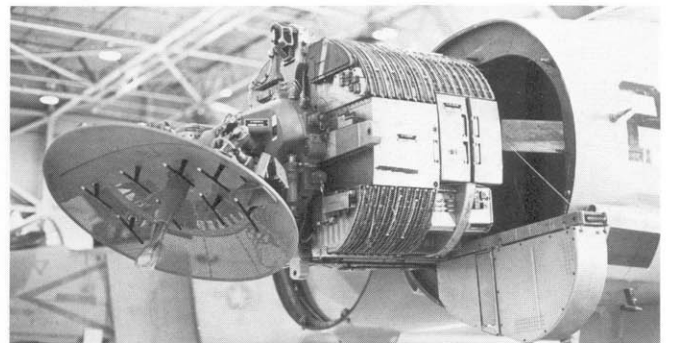
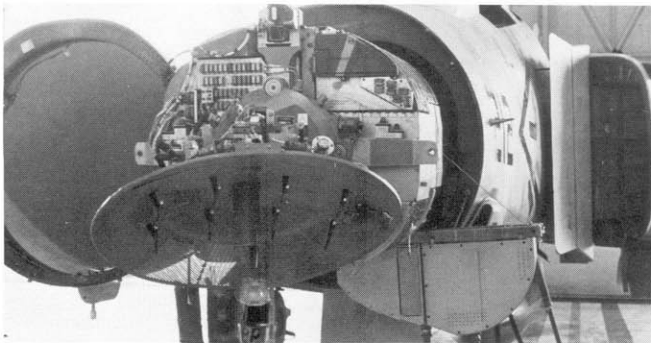
Extended outboard slat showing actuators.



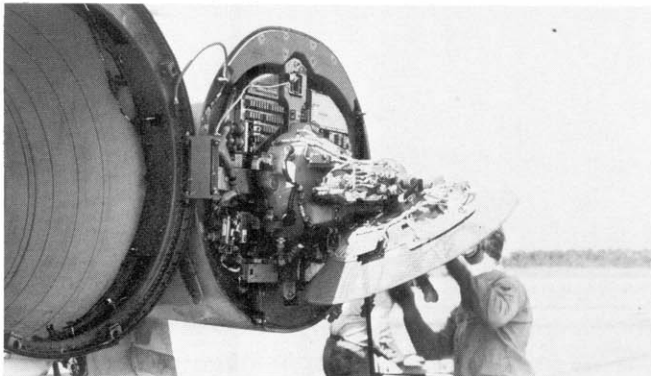
This unusual photograph shows the modification to the leading edge of the wing that was accomplished for the installation of the right inboard slat. The slat has been removed, and the actuators are clearly visible.



The F-4J and -S received the AWG-10 weapons control system with its associated radar, the APG-59. This is a photograph of the prototype unit. (McDonnell Douglas)



These two photographs show the radar installation on an F-4J, and it is pulled out on its rails for maintenance.

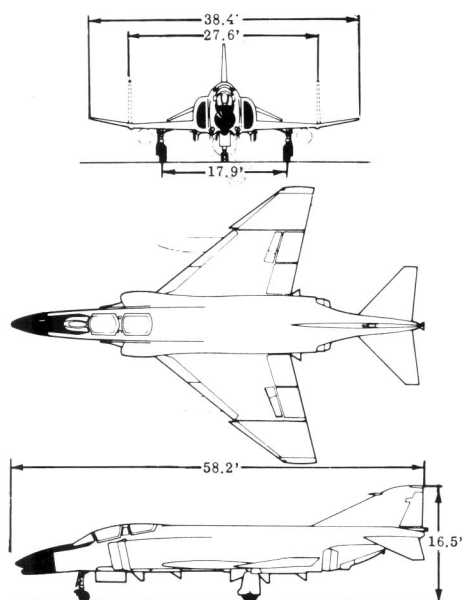


The radar on an F-4S. In these photos the radar unit has been pushed back inside the nose in its normal location and is undergoing tests.

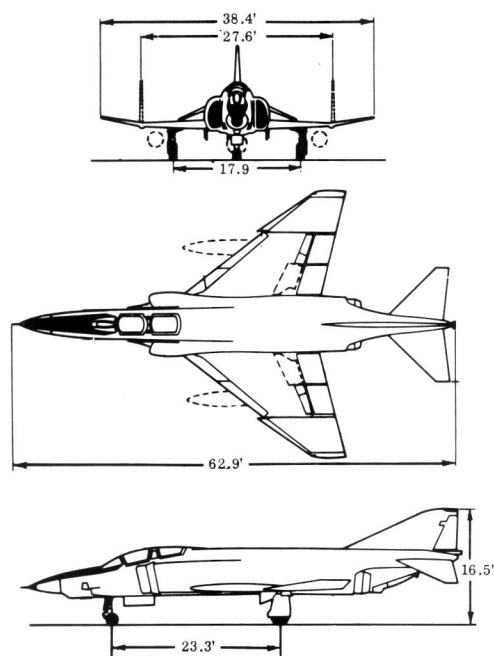
DIMENSION DATA

DIMENSION	ACTUAL	1/72nd SCALE	1/48th SCALE	1/32nd SCALE
Length F-4B/N/J/S	58.2'	9.70"	14.55"	21.83"
Length RF-4B	62.9'	10.48"	15.73"	23.59"
Wingspan	38.4'	6.40"	9.60"	14.40"
Wings Folded	27.6'	4.60"	6.90"	10.35"
Height	16.5'	2.75"	4.13"	6.19"
Wheel Track	17.9'	2.98"	4.48"	6.71"
Wheel Tread	23.3'	3.88"	5.83"	8.74"

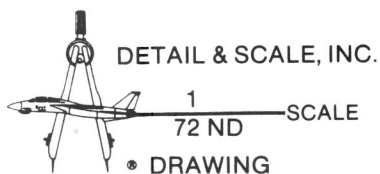
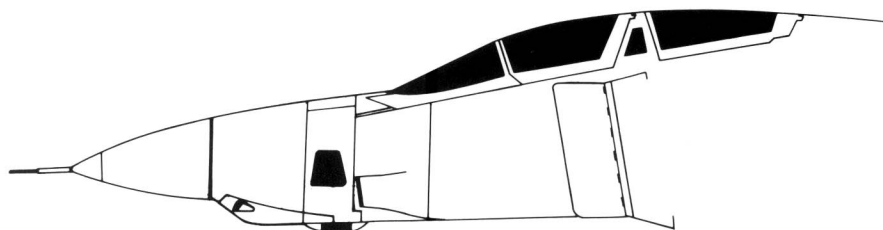
RF-4B



F-4B/N/J/S



1/72nd SCALE DRAWING OF THE CAMERA NOSE AS USED ON THE RF-4B



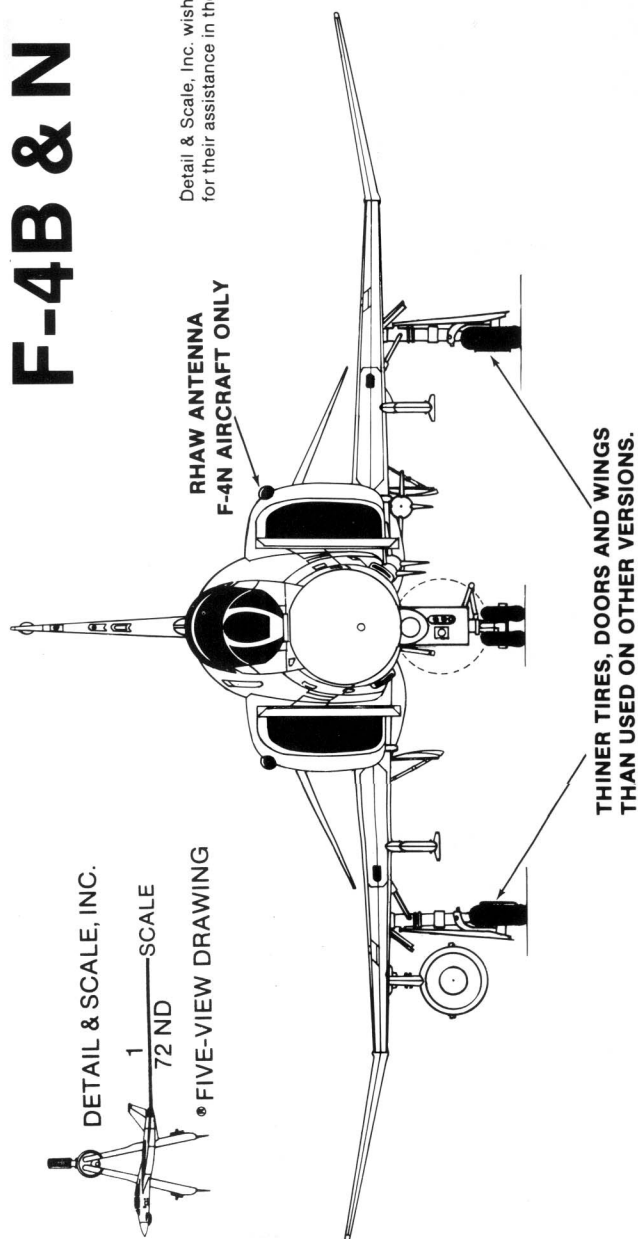
F-4B & N PHANTOM II

DETAIL & SCALE, INC.

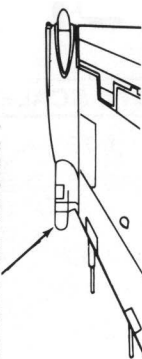
1
72 ND SCALE

© FIVE-VIEW DRAWING

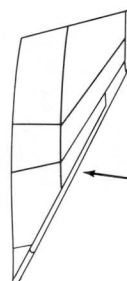
Detail & Scale, Inc. wishes to thank McDonnell Douglas for their assistance in the preparation of these drawings.



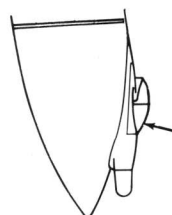
RHAW ANTENNA ARRANGEMENT
USED ON SOME F-4N AIRCRAFT



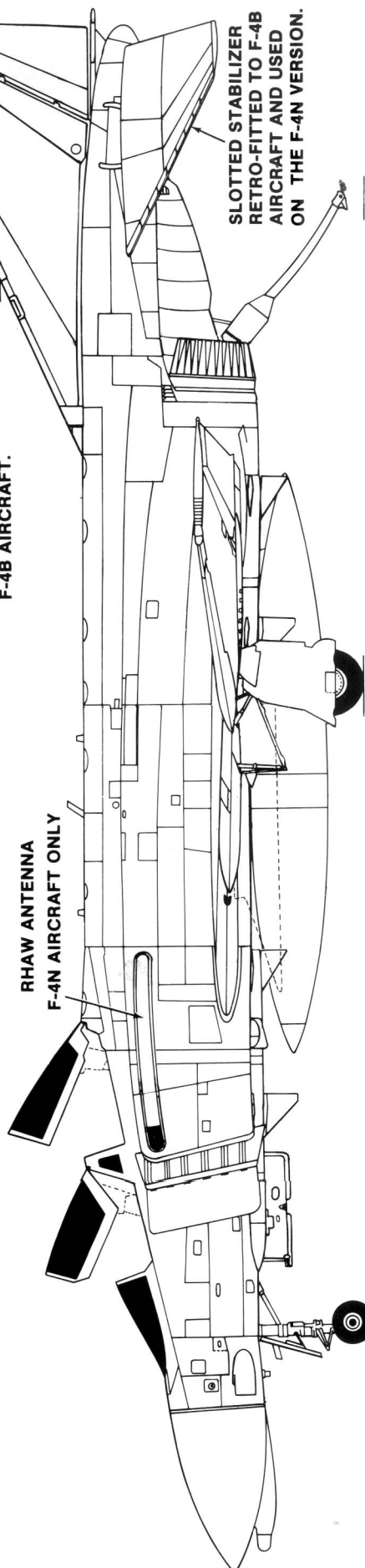
NON-SLOTTED STABILIZER
ORIGINALLY FITTED TO
F-4B AIRCRAFT.



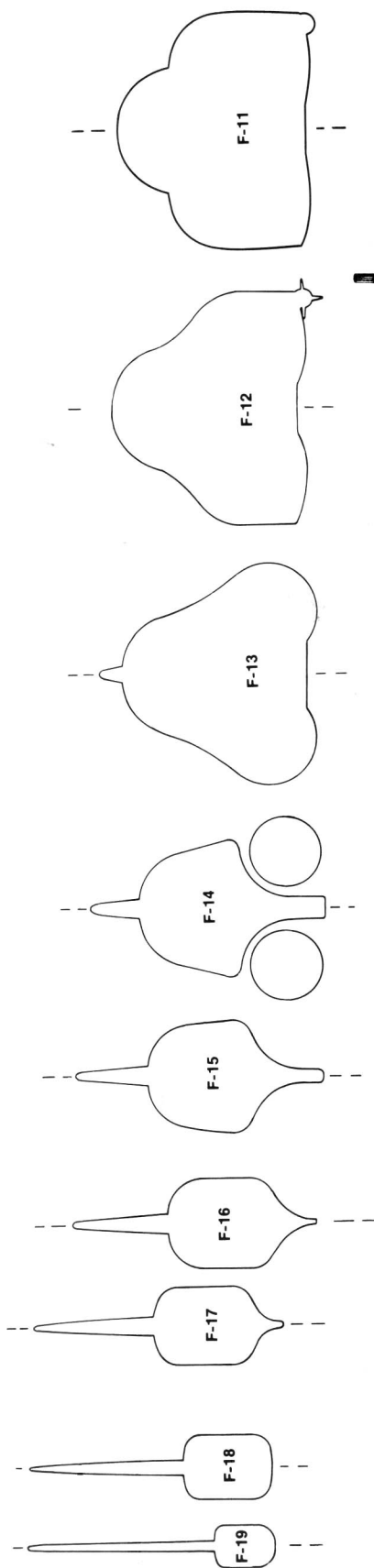
NOSE AND IR SENSOR USED
ON SOME F-4B AIRCRAFT.



RHAW ANTENNA
F-4N AIRCRAFT ONLY

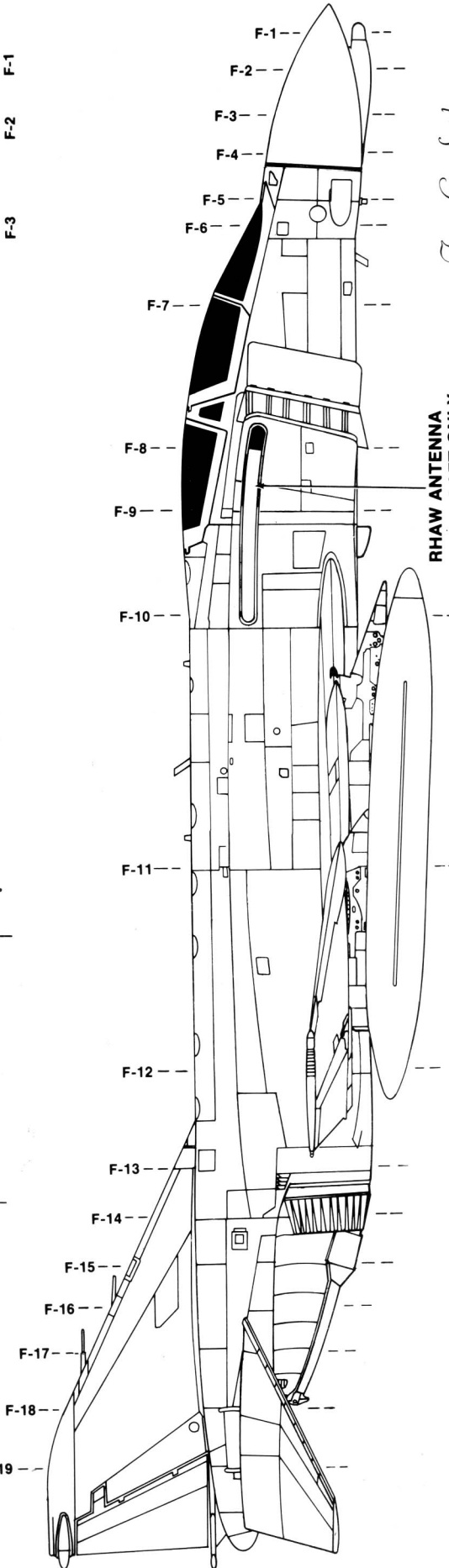
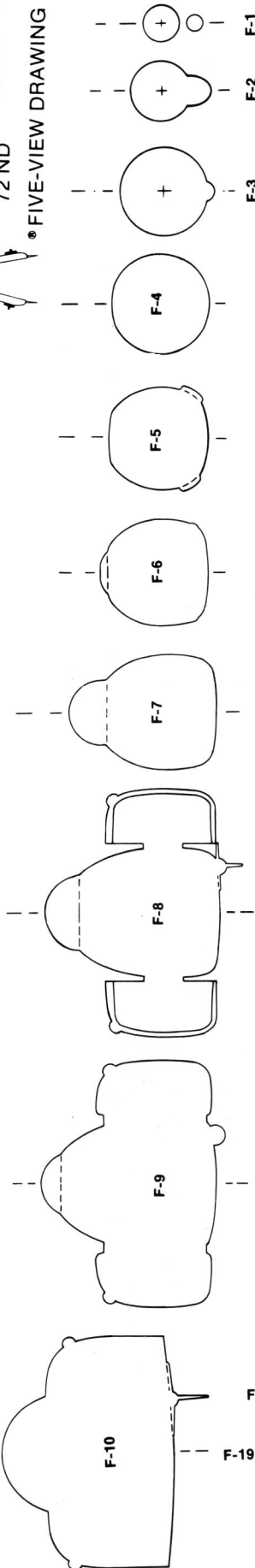


Ferry G. Smith



DETAIL & SCALE, INC.

* FIVE-VIEW DRAWING

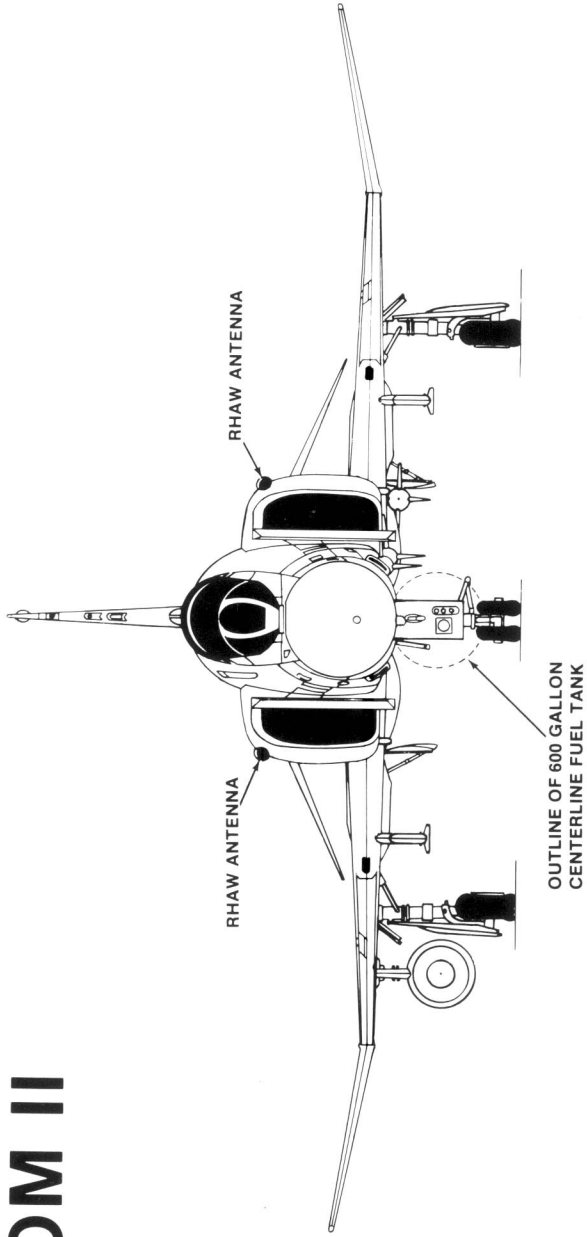


RHAW ANTENNA
F-4N AIRCRAFT ONLY

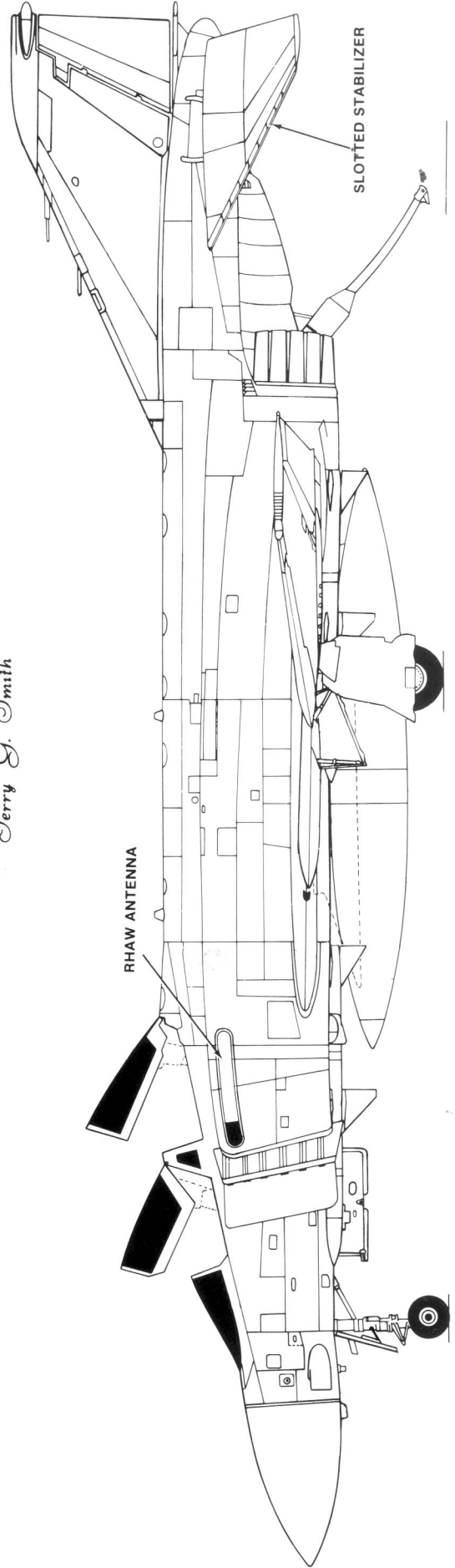
Terry G. Smith

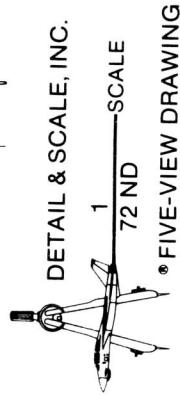
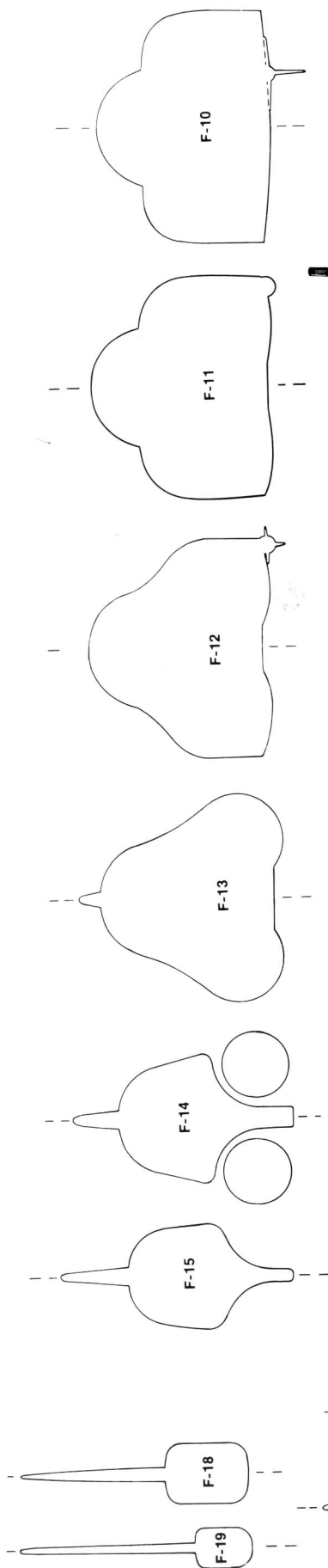
F-4J/S PHANTOM II

DETAIL & SCALE, INC.
 1
 72 ND SCALE
 • FIVE-VIEW DRAWING



Terry G. Smith

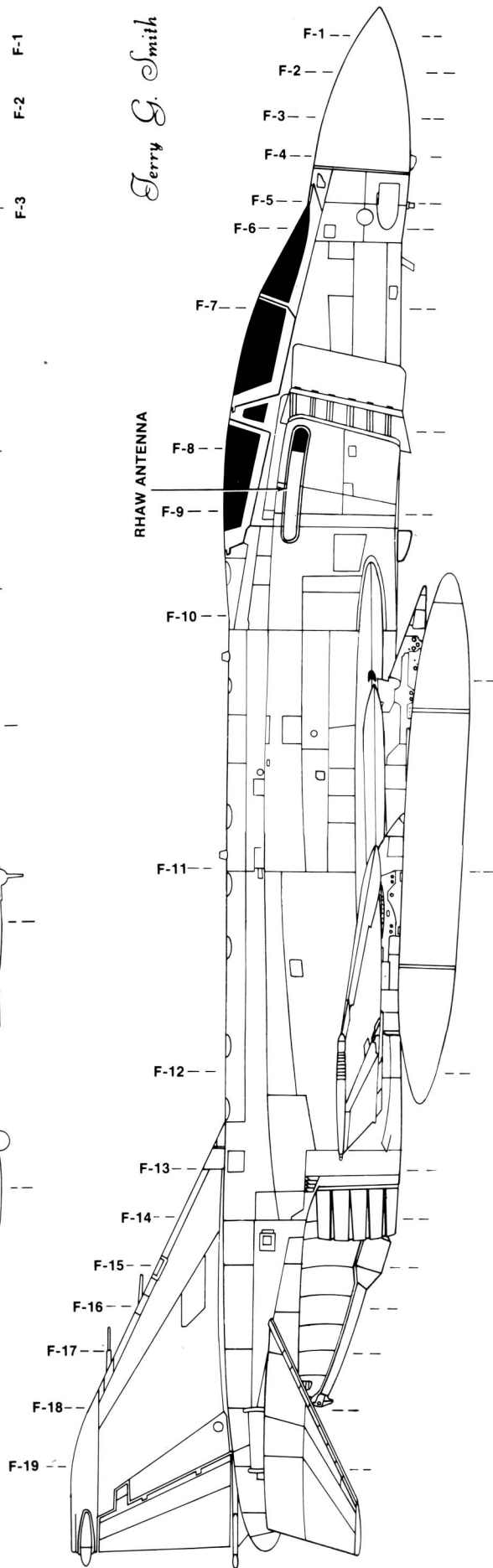
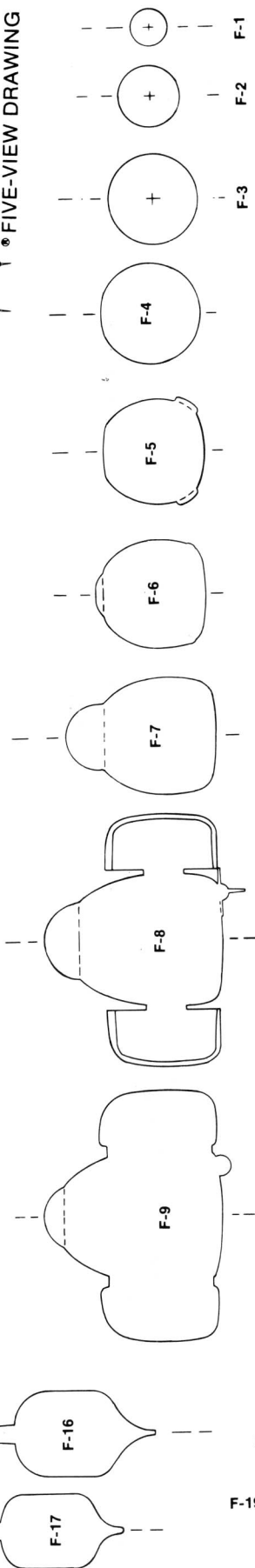




DETAIL & SCALE, INC.

SCALE

* FIVE-VIEW DRAWING



Jerry G. Smith



DETAIL & SCALE, INC.

1
72 ND SCALE

• FIVE-VIEW DRAWING

BOUNDARY LAYER FENCE

F-4S

LEADING EDGE OF RIGHT
WING WITH SLATS

RHAW ANTENNA

RHAW ANTENNA

SLOTTED STABILIZER

F-4S

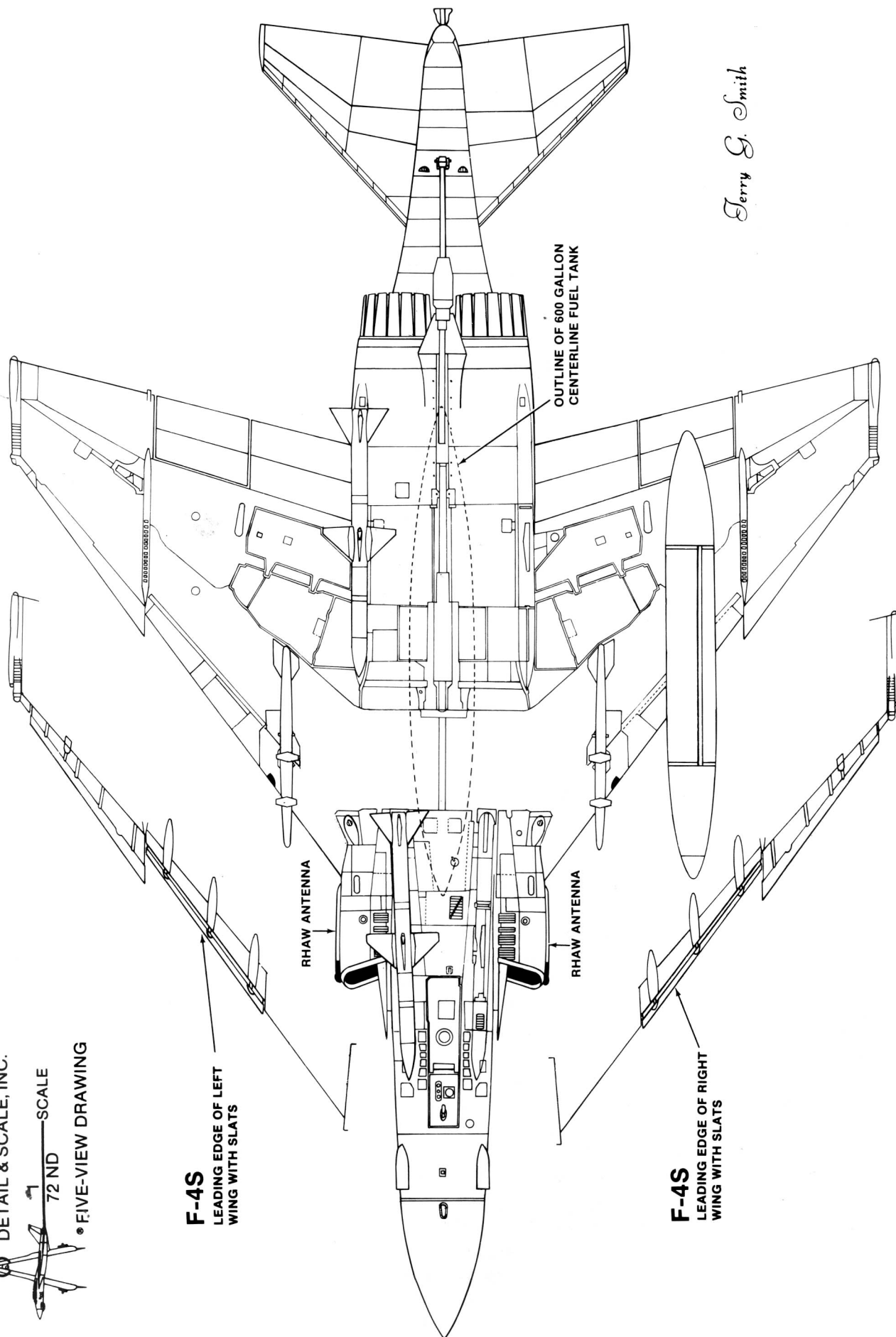
LEADING EDGE OF LEFT
WING WITH SLATS

BOUNDARY LAYER FENCE

Terry G. Smith



Terry G. Smith





F-4S

LEADING EDGE OF RIGHT
WING WITH SLATS

BOUNDARY LAYER FENCE

RHAW ANTENNA

RHAW ANTENNA

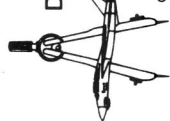
SLOTTED STABILIZER

F-4S

LEADING EDGE OF LEFT
WING WITH SLATS

BOUNDARY LAYER FENCE

Derry G. Smith

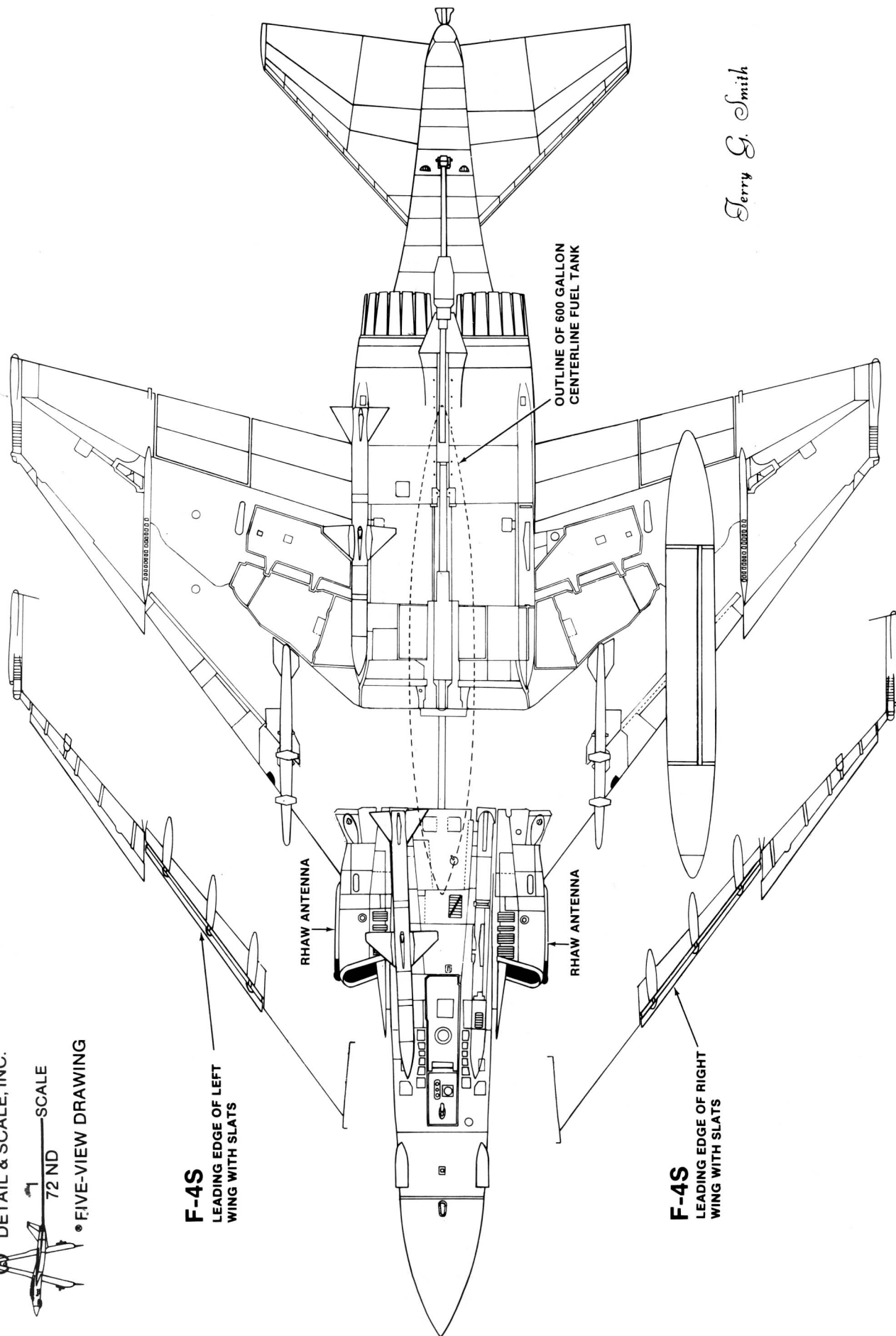


DETAIL & SCALE, INC.

72 ND SCALE

• FIVE-VIEW DRAWING

Jerry G. Smith



RF-4B



RF-4B, 153110, from VMFP-3, in between missions off of the USS Midway. This photo was taken at Osan Air Base, Korea on April 21, 1982. (McGarry via Cockle)

Since the Navy had planned to use the RF-8 Crusader and RA-5C Vigilante as their reconnaissance assets, a recon version of the F-4 was not originally ordered. But after the Air Force developed the RF-4C, forty-six F-4Bs were converted to RF-4Bs on the production lines. The aircraft were assigned to the Marine Corps, and about half remain in service in 1983. With the RF-8 and RA-5C now out of the active inventory, these RF-4Bs remain the only dedicated reconnaissance aircraft in the Navy or Marine inventory. No replacement is on the horizon, and one wonders just how much life is left in these veterans.

During their operational life, these RF-4Bs received many of the updates and improvements fitted to the F-4B and F-4N. These include the slotted stabilator, which was retrofitted, and the ECM antenna fairings installed on the F-4N. In order to keep as many RF-4Bs flying as possible, a few have received the thicker main tires, wheels, and wings as shown on page 56. Although originally carried, inboard pylons are no longer used on the RF-4Bs. Outboard wing and centerline pylons remain for carrying external fuel tanks.

The remaining RF-4Bs are all assigned to VMFP-3 based at El Toro. From time-to-time these aircraft are attached to carriers. In January 1983, a visit to El Toro by Detail & Scale revealed an interesting study in markings. Eighteen aircraft were photographed, and no more than two had the same markings. Two,

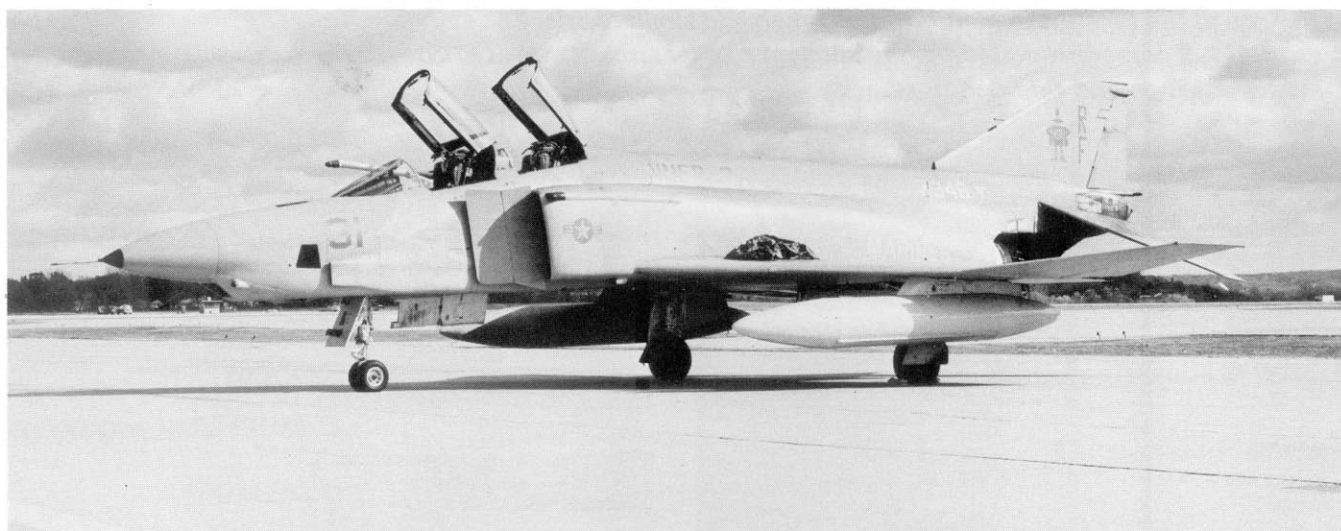
including the CO's aircraft, had the old gray-over-white scheme with red, white, and blue insignia. Others had the overall gray scheme with various assortments of subdued markings. Still others had the shaded gray subdued camouflage scheme, all making for an interesting contrast in markings.

Equipment carried by the RF-4B was much the same as that used by the RF-4C, however the ALR-17 ELRAC was not used in the RF-4B, and it did not have the flight controls in the rear cockpit. This is true of all Navy and Marine Phantoms. However, the RF-4B is the only Navy/Marine version to have conventional side consoles in the aft cockpit. Like the RF-4C, RF-4Bs are equipped with the APQ-99 radar in the nose, and cartridge flash ejectors on either side of the aft fuselage. There are no Sparrow bays under the fuselage, and no other armament is carried.

Vertical, forward-looking, and oblique cameras are located in the nose camera bay, with the forward and side cameras having rotatable mounts. Originally the camera nose was of the design with the flat underside, but two or three RF-4Bs now have the nose with the rounded lower surface. According to VMFP-3 personnel, these are ex-USAF noses used to keep as many RF-4Bs operational as possible. These aircraft also have the thicker tires and wings as used on the F-4J and -S. See page 56 for a closer look at one of these unusual RF-4Bs.



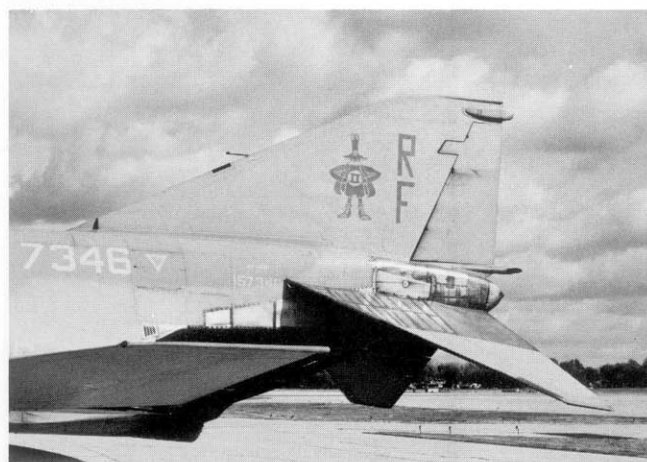
RF-4B, 153093, in an overall gloss gull gray scheme and black lettering. The national insignia is still in red, white and blue colors. This photo was taken on September 19, 1982.
(Cockle)



RF-4B, 157346, in a low visibility gray scheme. The lettering is in two shades of gray, and the national insignia is in dark gray.
(Cockle)

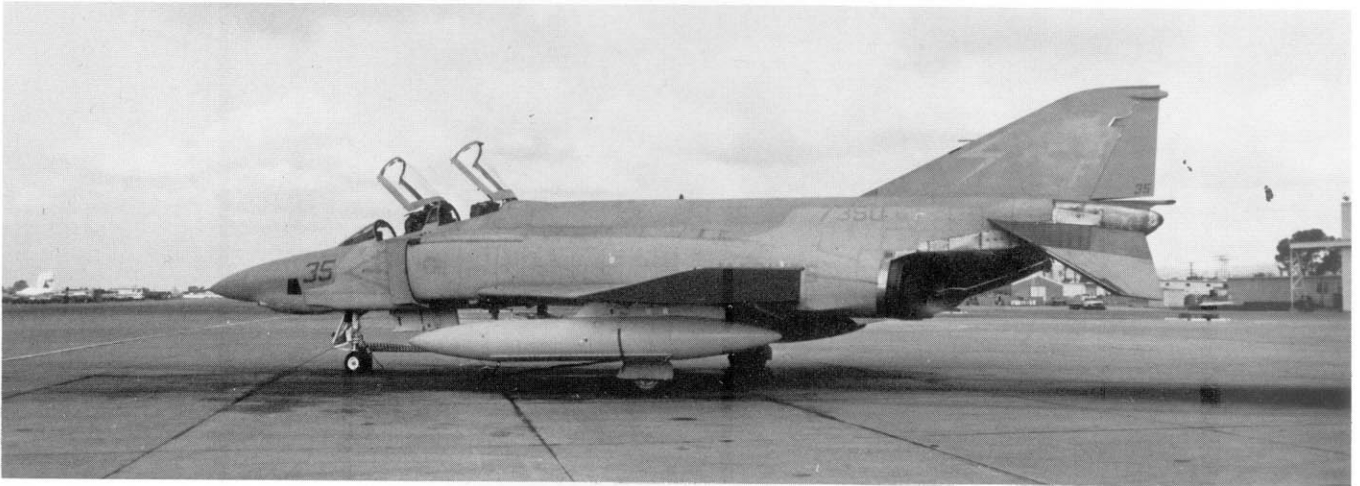


Another RF-4B in the low visibility gray. Note the differences in the tail markings between this aircraft and the one shown above. Both aircraft are from VMFP-3 at approximately the same point in time.



Close-up of the tail markings on RF-4B, 157346, as shown above. Note the Phantom II insignia. The panel just aft of the 7346 is the photo flash cartridge ejector.
(Cockle)

RF-4B/C/N/J



This RF-4B, 157350, was the next to the last RF-4B built. According to VMFP-3, it is now a collection of parts from other aircraft. The nose section is from an Air Force RF-4C, and is of the more rounded style as compared to the standard RF-4B nose with the flat underside. The fuselage is from an F-4N, and the wings are from an F-4J, having the thicker wheels and tires, and having the bulge in the wing. One other of the twenty-two RF-4Bs at El Toro at the time these pictures were taken had similar parts. The standard RF-4B had the thin wings and tires. VMFP-3 personnel stated that possibly one other aircraft, not at El Toro at the time, might possibly have the thicker wings and rounded nose.



These two photographs show the rounded style nose which is not common to RF-4Bs. Some Air Force RF-4Cs have this style of nose.



Careful examination of these two photographs will show the bulges in the inner wings. Again, this is non-standard for an RF-4B.

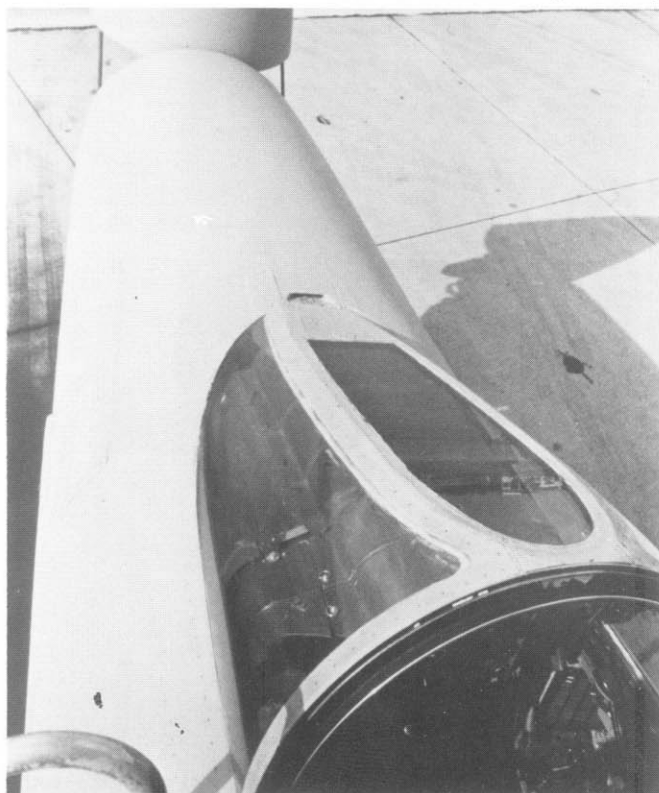
RF-4B DETAILS



Head-on view of an RF-4B showing the forward-looking camera. Note the RHAW antennas on the air intakes.
(Cockle)



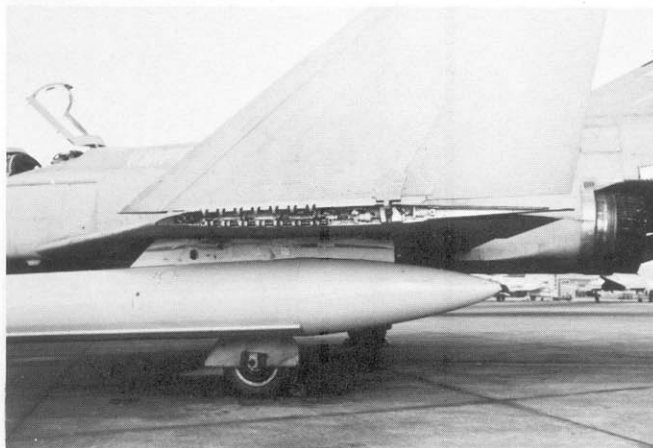
Left side view of the nose. Compare the front nose landing gear door with those used on the F-4B/N and F-4J/S (pages 11 and 22) and several differences can be seen. This is the standard RF-4B nose with the flat underside. Also note how the scoops are faired into the sides of the nose. This is also different from the F-4B/N and J/S.
(Cockle)



View looking down on the windscreen. Note the blower vent hole that removes rain from the windscreen.
(Cockle)



RF-4Bs have been fitted with the same RHAW antennas on the intakes that are used on the F-4N.



Wing fold detail on an RF-4B.



Right side view showing wing tip, pylon, and external tank details on an RF-4B. Also note the RHAW antenna on the intake. It should be noted that inboard pylons are no longer carried on RF-4Bs. (Cockle)



RF-4Bs have the smaller afterburner nozzle of the J79-8 engine as used on the standard F-4B/N.

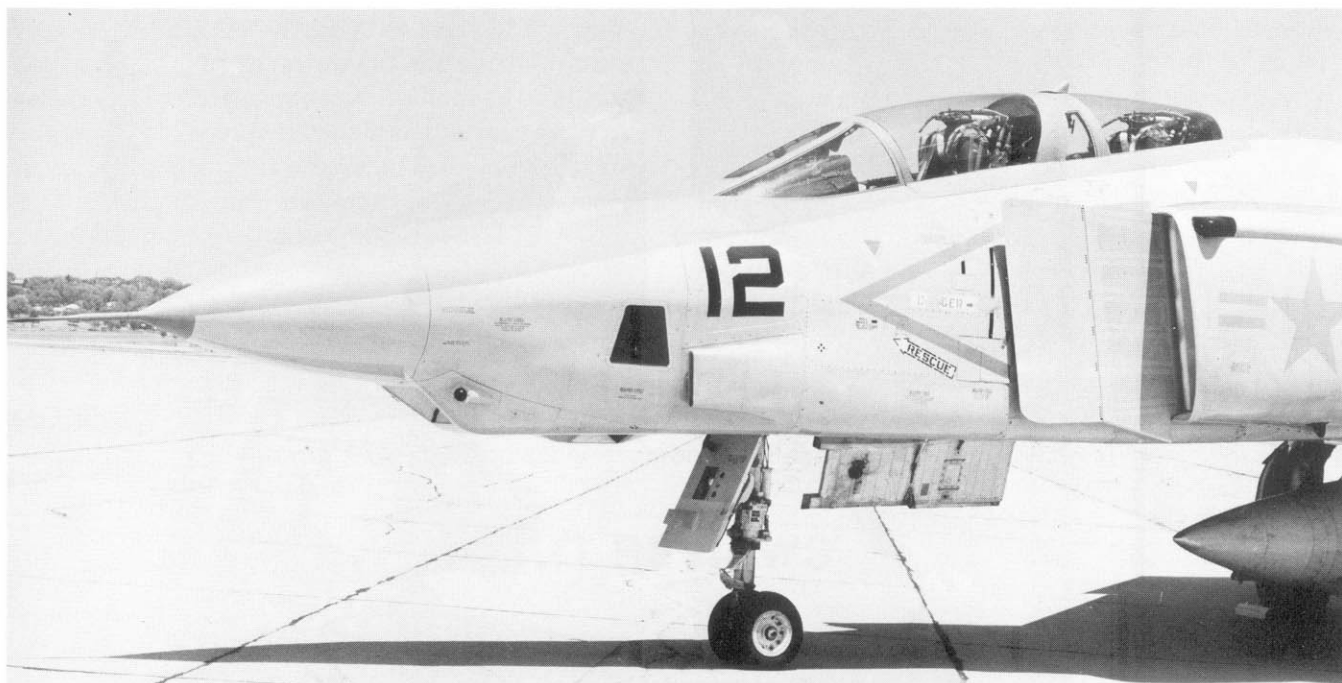


RF-4Bs were retrofitted with the slotted stabilator as evidenced by this photo.



Tail hook detail on an RF-4B as viewed from behind.

CAMERA BAYS



Left side view of the standard RF-4B camera nose. The forward, side, and vertical oblique camera windows are visible in this view.

(Cockle)



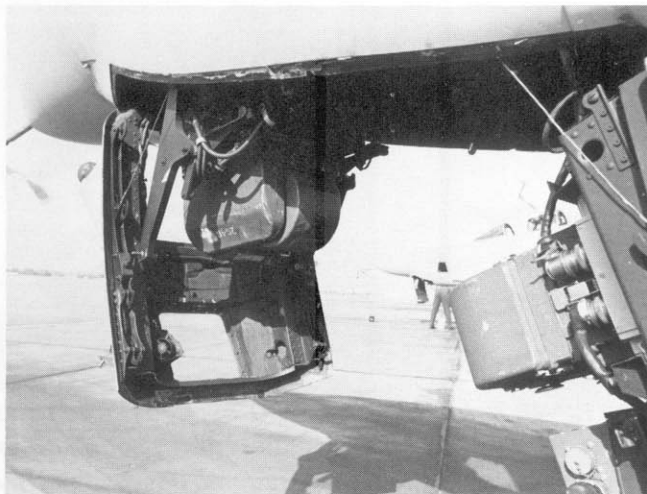
Right side view of the camera nose.



Left side view of the nose with the camera bays open.



Open camera bay as viewed from the right rear. The vertical low altitude panoramic and high altitude vertical camera windows are visible in this view as is the small white amplifier beacon.



Forward-looking camera from the left rear.

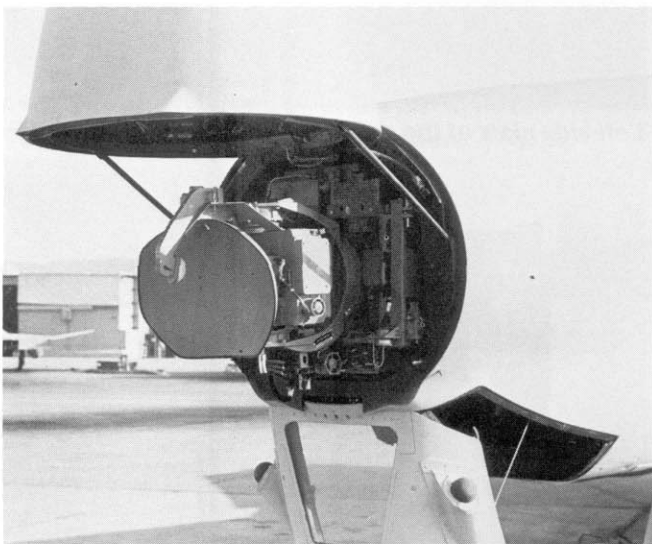


The vertical still picture camera as mounted on the rear camera bay door.

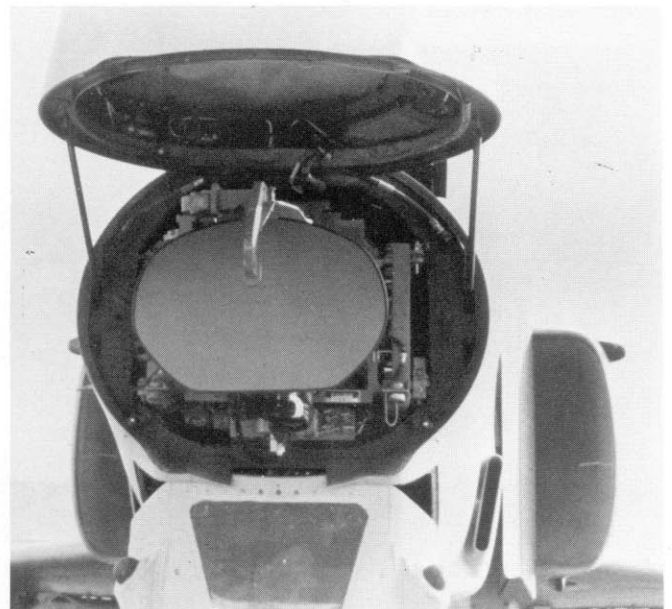


Open rear camera bay door with the camera in place.

RF-4B RADAR



The RF-4B radar is the AN/APQ-99, and is also used in the RF-4C. It is smaller than radars used in other Phantoms due to the smaller radome necessitated by the camera bay.



Front view of the radar clearly showing the shape of the dish.

MODELER'S SECTION

PRODUCT REVIEW POLICY. In each of our publications we will try to review kits and decals that are available to the scale modeler. We hope to be able to review every currently available kit that is useable by the scale modeler. Kits produced in the past that are no longer generally available, and those more intended to be toys than accurate scale models will not usually be covered. Additionally, we do not

intend to give a complete step-by-step correction-by-correction account of how to build each kit. Instead we intend to give a brief description of what is available to the modeler, and point out some of the good and not-so-good points of each kit or product. In this way we hope to give an overall picture of what the modeler has readily available for his use in building the particular aircraft involved.

Note: In the interest of saving space, we are not including any of the older kits such as the Aurora and UPC 1/48th scale kits which are no longer generally available. These kits were not anywhere near the quality of the latest offerings that we will emphasize in this section. Further, we have combined all similar issues of a kit by one company, such as the Revell 1/72nd scale Phantom, into one review in order to save space.

KIT REVIEWS

1/72nd SCALE KITS

Airfix and MPC Kits, Various Issues and Numbers

As the oldest kit available of the Phantom in 1/72nd scale, this kit has its drawbacks. Except for the first releases, this model comes with optional parts which are supposed to allow the modeler to build any U.S. version of the F-4 except the RF-4s and F-4S. However, the wings, wheels and gear doors are the thin type, which means only an F-4B or -N is possible. But then the -N is eliminated because the horizontal stabilizers are the original non-slotted type. So by only considering the wings and stabilizers, all possibilities are eliminated except the early pre-war -Bs.

The kit has sparse and mostly incorrect surface detail. The cockpit has two seats, a forward control column, and two figures, all of which fit on a floorboard. This is covered by canopies and a windscreen which are too narrow.

External stores include wing and centerline fuel tanks, six Sparrow missiles, six 750 pound bombs, and two gun pods. The inboard wing pylons are the Navy style, and have crude triple ejector racks molded on them.

The nose to be used for the F-4B/N/J is too blunt and must be reshaped. An IR sensor is provided for the F-4B or -N. Other than the nose, the proportions and shape are generally correct. Updates, such as RHAW antennas, are not provided. Without belaboring the point, this kit leaves a lot to be desired when compared to later releases.

Hasegawa 1/72nd Scale F-4J

This kit falls far short of the latest 1/72nd scale kits offered by Hasegawa, and is not in the same league as

their new Phantoms in 1/48th scale. First, the model just does not represent an F-4J. It has the thin wings, wheels, tires, and landing gear doors. It has inboard leading edge flaps which the -J does not have, and it has the non-slotted stabilator instead of the proper slotted stab used on -Js from the beginning. Huge rivets cover the model and must be sanded off if the model is to be built.

The other major problem with the kit is that the proportions are all wrong. The main landing gear is way too long, and appears to have been modeled after gear seen while an aircraft was in flight with the oleos fully extended. From the front, the intakes are too narrow in width, and the chord at the wing tips is too short. Without going any further, suffice it to say that the kit does not build up into an accurate Phantom. However, the nose can be cut off just ahead of the canopy, and spliced on to an F-4E from Minicraft/Hasegawa. This will result in a more accurate representation of the F-4J.



A 1/72nd scale F-4J from Hasegawa.

IMC "Battle Damage" 1/72nd Scale RF-4B

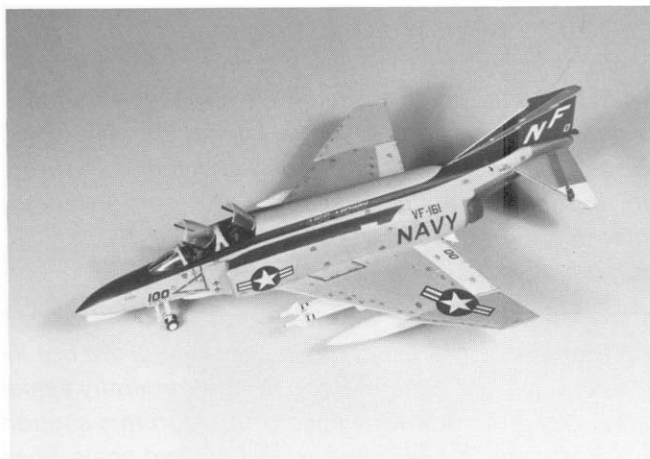
This model is an adaptation of the Revell F-4B kit covered below, and the comments made about the Revell kit apply here. The missile bays are filled in, and the camera nose has been added. However, the nose is too narrow, and generally the wrong shape. The kit is no longer readily available, and a better RF-4B can be made with a little work using other kits as explained below.

Revell 1/72nd Scale F-4B and F-4J Kits

As originally released, this was one of the first F-4 kits, and represents an early F-4B. It has the thin wings, non-slotted stabilizers, IR sensor under the nose, and short burner nozzles. While the kit shows its age, it still remains the best basis for building an F-4B or -N in 1/72nd scale. Dimensions, shapes, and proportions are basically correct, and by adding updates and detail, a very nice model could be made.

The cockpit consists of a single piece including seats, consoles, and floor. It should be noted here that this model has the standard side consoles in the rear cockpit. This is a problem with all F-4 kits of Navy and Marine Phantoms since these consoles are not present in the real thing. To build an accurate rear cockpit from a kit in any scale, the modeler will have to do a lot of cutting and scratch work. For this particular kit, the seats are merely vertical pieces of plastic, and most modelers will want to rework the entire cockpit.

The landing gear leaves a lot to be desired. There is no nose gear well, and the nose strut is mounted on a flat piece of plastic across the forward end of the well. This can be cut out and easily detailed. We recommend using struts and wheels from a Minicraft/Hasegawa F-4E kit. The main gear wells have a rim



An older issue of the F-4B kit in 1/72nd scale by Revell. This model has inboard pylons and Side-winder missiles from an Airfix kit.

around them for mounting the doors in the closed or in-flight position. For a "gear down" configuration, these rims should be removed, and walls should be added around the wells. The struts from an F-4E can be used for the main gear, but the flat Revell doors should be used. The thin wheels should also be used, or can be replaced with ones from a Hasegawa F-4J, or an Airfix kit. Once the cockpit and landing gear has been reworked and detailed to the modeler's satisfaction, the model now needs the appropriate updates.

The various ECM antennas should be added as necessary. The antenna fairing at the top of the vertical stabilizer above the rudder was fitted to F-4Bs during the Vietnam War. On some aircraft, another fairing was added at the top of the stabilizer on the leading edge. The intake-mounted fairing used on the -N may also be required. Other antennas were located under the fuselage and wings, and the modeler must determine from photographs which are



Revell 1/72nd scale F-4B with features included in the latest release of this kit.

(Revell)

appropriate for the model he is building. All can be made from sprue or plastic stock, and the 1/72nd scale drawings in this book will help get the right size.

Another update that will probably be required is the slotted stabilator. This can be obtained from a Hasegawa F-4E. On the vertical tail, the small intakes at the base of the leading edge should be added by making a vertical cut about an eighth of an inch up from the spine. Then cut the resulting triangular piece of plastic off even with the spine, and replace it with thin plastic card. A photo on page 32 shows this feature to good effect.

The kit comes with a lot of rivets, and these should be sanded flush during final sanding and priming. As originally issued, the kit came with two outboard wing pylons and the shorter Navy style external tanks. While these can be used for an early Phantom, the modeler may want to substitute tanks and pylons from another kit. Here again, the Minicraft/Hasegawa kits are good sources, and they can also provide a centerline tank. Inboard wing pylons can be taken from the Minicraft/Hasegawa kits too, but will have to be converted to the Navy style with the straight leading edge. This is fairly simple, and the result is better than using a pylon from an Airfix or MPC kit. The new Hasegawa weapons kits in 1/72nd scale provide very nice ordnance and other external stores to complete the model.

At some point in time Revell reissued this kit, first in a Blue Angel set, then as a single kit, with some changes and additions. They attempted to make a -J by making the wings and main gear thicker, and by removing the IR fairing under the nose. At the same time, they made an attempt to add the ECM or RHAW antenna to the top of the tail, and slotted stabilators were included. Longer afterburner nozzles were added for the -J version. The results were really not satisfactory. The bulges in the wing are way too thin, but the ones on the main gear doors are better. The ECM antenna on the tail does not extend aft of the trailing edge as it should, and the slotted stab is not crisply molded. In our estimation, the original kit built into a better -B than the later kit built into a -J.

In looking through the latest issue of the kit (Number 4302) the -J molds are still used, but the kit is supposed to be for a -B! The thicker wings, gear doors and wheels are still there, even though the short burner cans have returned. Although the box art does not show it, the IR sensor is included, and Revell has added a centerline tank and inboard wing pylons with Sidewinder missiles. These were not included in the original issue. The wing tanks are the later longer type.

With no new thin wing F-4B/N kit on the horizon in 1/72nd scale, it seems that this kit will form the best basis for building these versions of the Phantom for the foreseeable future. It also provides the best basis for an RF-4B which can be built by splicing on the nose of a Testors RF-4C and filling in the missile bays as explained below. As such, we recommend this kit, but the modeler must realize that it will require a lot of rework and modification.

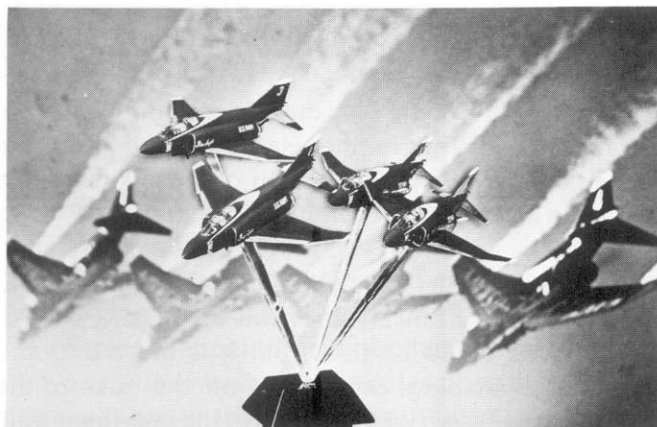
Testors 1/72nd Scale RF-4C/E

Testors does not claim that this kit is an RF-4B, and it isn't. It has the thicker wings, non-slatted stab, and other features that definitely make it an Air Force Phantom, but we will cover it here for two reasons. First, it provides the basis for an RF-4B conversion, and since there are presently no readily available RF-4B kits in 1/72nd scale, a conversion is the only way one can be built. Second, this kit was not available when we published, The F-4 Phantom in Detail & Scale, Part I, and therefore it was not included in that book.

The kit is basically a scaled down version of the earlier Testors 1/48th scale RF-4C, and most comments in our review in Part I for that kit also apply here. Rather than cover all of those points again, we will cover here the way to build a Marine RF-4B.

An early Revell 1/72nd F-4B should be used as the basis since it will provide the necessary thin wings, wheels, and gear doors. Since RF-4Bs were retrofitted with the slotted stab, this will be required, and again, the Minicraft/Hasegawa F-4E kit provides a good one. The ones in the later Revell kit are not as good.

To build the conversion, cut the Revell nose off at the same place that the nose on the Testors kit ends. This is just ahead of the cockpit and canopy. Then,



Revell has issued its 1/72nd scale Phantom as an F-4J, and packaged it as a kit of four with Blue Angels markings. (Revell)

using part 11 from the Testors kit as a guide, carefully cut away the underside of the forward portion of the wing and fuselage from the Revell kit so that part 11 may be added in its place. This will fill in the forward missile bays with the proper fairings while providing a better nose landing gear and the opportunity to use the better Testors interior. All of this will take some careful cutting and shaping, but it will work if the modeler is patient. Next, the camera nose can be added from the Testors kit. It is the style with the flat underside, which is correct for most RF-4Bs. It should be noted that the two or three RF-4Bs with the curved underside for the camera bay also have the thick wings, tires, and main gear doors.

The cockpit, seats, and instrument panels from the Testors kit can be used with some cutting, fitting, and filling. However, the rear control column is not used in Marine RF-4Bs, so delete this from the model.

The inboard pylons with the straight leading edge can be used from the Testors kit. These were used on RF-4Bs for some time, but have since been deleted. The outboard wing tanks and pylons from the Testors kit are better than those in the Revell kit, and the centerline tank can also be used. Other parts that may be taken from the Testors kit to enhance the model include the afterburner cans, tail hook, and nose gear struts and wheels. However, the forward nose gear door on the RF-4B is different from that on the RF-4C, so this cannot be used from the box. The only way to get it correct is to modify one from a kit door, or make it from scratch.

Lastly, the rear missile bays must be filled in flush with the bottom of the fuselage and wing. This combining of the two kits will result in a realistic RF-4B. Just be sure to check the updates needed for the aircraft being modeled. Current RF-4Bs have the ECM antennas on the tail, intakes, and under the wings as on the F-4N.

Building a Better F-4J/S

The only kits of the F-4J that are presently available in 1/72nd scale are the Hasegawa kit, and the reworked Revell kit. Since both of these kits leave a lot to be desired, we recommend building the F-4J as a conversion from an F-4E with the earlier non-slatted wing. The kit to use is the Minicraft/Hasegawa F-4E, and the nose from a Hasegawa or Revell F-4J. An Airfix nose could be used, but it is too blunt, and requires reshaping. Simply cut off the nose of the F-4E at a line even with the front of the nose gear well. Glue the fuselage halves together from the Hasegawa, Revell or Airfix kit, then add the radome. Cut off the nose in the same place as you did on the F-4E.



A Minicraft/Hasegawa F-4E in 1/72nd scale converted to an F-4J with the use of a Revell nose.

Splice this new nose on the F-4E, and you have the makings of an F-4J. Use the nose gear doors from the kit that provided the -J nose. The rest of the model is correct for a -J with the longer burner cans, thicker wings and landing gear, and thicker main gear doors. Now, all that is required are the ECM antennas and other updates needed for the particular aircraft being modeled. But if the inboard wing pylons are being used from the Hasegawa kit, be sure to change them from the Air Force style to the Navy type by straightening the leading edge.

If an -S version is to be modeled, the procedure is the same except that a Minicraft/Hasegawa kit with the slatted wing should be used.

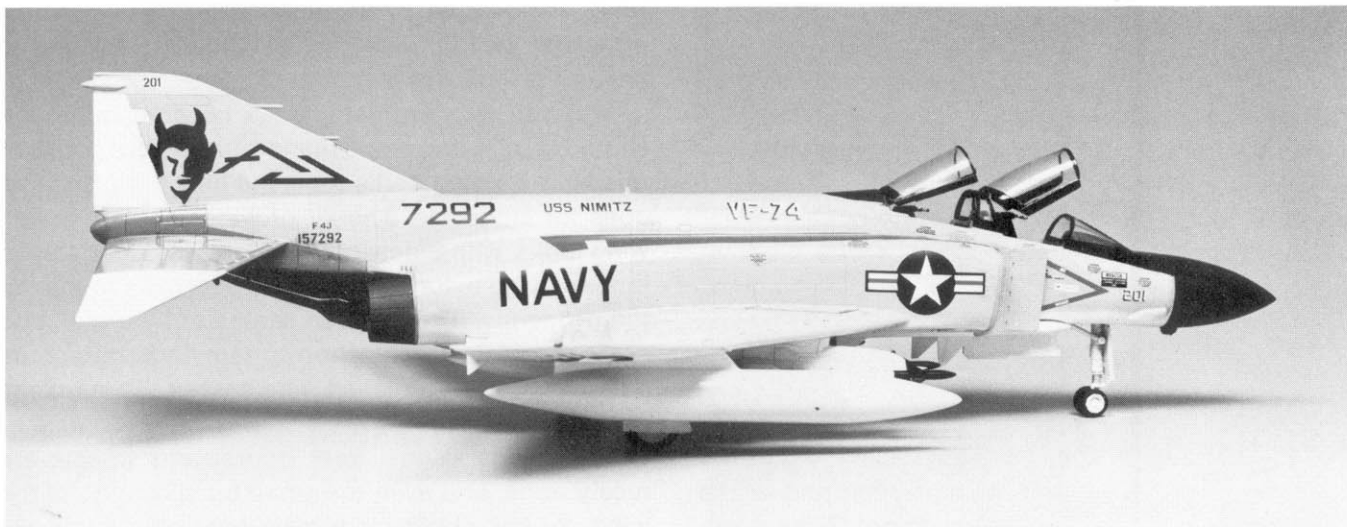
New Release

ESCI has announced future releases for 1983 that include an F-4C/J kit in 1/72nd scale. If they do a good job in researching this kit, and provide the required optional parts, this new kit could make the conversion explained above unnecessary. As a minimum, two sets of afterburner cans, two forward nose gear doors, and two sets of stabilators will be required. No release date had been announced at press time, but we look forward to seeing this kit with high expectations. Another release announced by ESCI is a 1/72nd RF-4C/E, and it will probably have the thick wing, making it unsuitable for an RF-4B.

1/48th SCALE KITS

ERTL/ESCI (Formerly Scalecraft) 1/48th Scale F-4B/J.

Although marketed as an F-4B or J, this kit has the thick wings meaning that an accurate -B cannot be built from it. It does build into a nice -J.



ESCI 1/48th scale F-4J.

(Scalecraft)

The kit is very similar to the ESCI F-4C/D and F-4E kits reviewed in the other two parts of the Detail & Scale Phantom books, so we will not go into a lengthy review here.

The kit is dimensionally and proportionally correct, and features nice recessed scribing. The cockpits are poorly done, and are a far cry from being an accurate replica of the real thing, but the cockpits (particularly the rear cockpit) are going to be a problem on any model of a Navy or Marine Phantom. The slotted stab is not particularly well done, but otherwise this is a pretty good kit from which a nice model can be built. Recommended.

Revell 1/48th Scale F-4J

This kit is basically a rework of the Revell 1/48th scale F-4E. In fact, the F-4E nose is packaged in this kit along with the one for the F-4J. Since we reviewed the F-4E in part 2, we will not cover this kit in detail here, but we will mention the differences.

Revell included a new radome and nose landing gear doors for the -J. However, they failed to provide the Navy style inboard pylons which will have to

come from another kit. Since the kit represents an early -J before the ECM fairings were added to the intake, these features are not included. The F-4E kit had the slatted wing, and some of its features remain in this kit. The three small actuator fairings, which go under each wing on a slatted aircraft, are provided for this model, but should not be used. Their locator holes should be filled in and sanded smooth. However, the entire slatted wing assembly from a Revell F-4E kit could be substituted in order to build an F-4S. Currently, this is the only way to build an F-4S in 1/48th scale.



Revell 1/48th scale F-4J Phantom. This represents an early F-4J, before RHAW antennas were added to the intakes.
(Revell)



ESCI/ERTL F-4B in the new markings to be released in 1983. This kit has the thicker F-4J/S wings instead of the correct thin wings.

Minicraft/Hasegawa 1/48th Scale F-4J

This new kit is excellent, and is the best F-4J on the market. However, the Monogram kit is also very nicely done, and since the Minicraft price in the United States is about three times that of the Monogram kit, one wonders what the effect of price and competition will be. In the case of the F-4B/N kit (covered next) there is no other 1/48th scale thin wing F-4 offered in competition, and the high price will probably not be such a factor. But regardless of price, the



The Minicraft/Hasegawa F-4J in the markings of VF-84. (Hasegawa)

kit is one of the best models we have seen, and we are glad that Hasegawa has begun doing 1/48th scale aircraft. We hope there will be many more to come.

The kit can be built as an early or late -J, with the appropriate ECM fairing provided for the intakes. The instructions explain whether to use these parts or not depending on which scheme is used from the excellent decal sheet.

We only found two problem areas in this kit, and one is easily corrected. That is the fact that inboard leading edge flaps are provided, and these are not found on an F-4J. This can be easily solved by filling in the scribed flap outline with putty, and then sanding smooth. Keep in mind that this is the inboard leading edge flap on the inner wing panels only. The outer flaps on the inner panels remain.

The other problem area is the cockpit. Like every other F-4 model, Air Force cockpits were modeled. The kit comes with consoles for the rear cockpit, and they simply should not be there. In fact, there is even a locator hole for the control column in the rear cockpit, and flight controls were not in the rear cockpit of

Navy and Marine Phantoms. To do justice to this otherwise beautiful model, the builder is going to have to rework the rear cockpit.

With the two problem areas covered, attention should be directed to the numerous positive points of this kit. As stated earlier, it is the best F-4J, and this goes for any scale. The kit provides centerline and wing tanks, with Sidewinder missiles included for the inboard wing pylons. Four AIM-7 Sparrows round out the ordnance. The ejection seats are beautiful, and come complete with ejection curtain rings, parachute pack, and nicely detailed side pieces. Three-piece pilot and NFO figures are also provided.

The thicker wings, gear doors, and wheels are nicely done, and even the small bump on top of the wing directly above each main gear strut is represented. Under the wing, catapult bridle hooks are glued in as separate pieces. The auxiliary air doors are molded in the open position.

The speed brakes are separate pieces, with the actuating cylinder being another separate piece so that it can be mounted at the correct angle between the wing and the brake itself.

Every part is crisply and delicately molded, with scribing being a combination of raised and recessed lines. The slotted stabilator is excellent, and clear parts are thin and very clear with no distortion.

Although the slatted wing to build an -S is not provided, the new Hasegawa catalog shows that a 1/48th scale F-4E kit is not far off, and it will be a slatted F-4E. Detail & Scale has learned that the wings from the F-4E kit will fit this F-4J in order to build an F-4S, and the F-4J wings could go on the F-4E to build a non-slatted -E.

This kit is really super, and we highly recommend it.



Minicraft/Hasegawa's beautiful new F-4B/N in 1/48th scale. This is the only 1/48th scale F-4 with the thin wheels and wings that is presently available. (Hasegawa)

Minicraft/Hasegawa F-4B/N

This kit is similar to the F-4J covered above, but has all of the necessary changes to build an F-4B or -N. Most importantly, this is the only kit presently available of a thin wing Phantom in 1/48th scale. It has a different fuselage than the F-4J kit that includes the IR fairing under the nose. This fairing has the small attachment under it that looks something like a parrot's beak. This was used on a relatively few F-4Bs, but included in them was the beautifully marked aircraft belonging to the CAG of Carrier Air Wing Fifteen. Markings for this aircraft are provided on the excellent decal sheet. The IR sensor can easily be converted to the standard type with a knife and sandpaper.

Both ECM or RHAW antennas are present on the vertical tail, and again, the front one in particular can easily be removed. The aft one could also be removed if an early F-4B was to be modeled. The intake-mounted ECM fairings are also provided as optional parts.

The model suffers from the same major problem as the F-4J in that the rear cockpit has the consoles molded in. These should be removed, and both cockpits should be "navalized" using the photos in this book as a guide.

The same ordnance load as in the F-4J kit is also in this kit, and most other features are the same. However, the catapult bridle hooks are molded into the bottom of the wing rather than being on separate pieces. The flat main gear doors are provided, as are the thin wheels and short burner nozzles. However, the thicker wheels and longer nozzles are also included, so be sure not to use the wrong ones.

This kit can also be used as the basis for a correct RF-4B. By using it, along with the nose from an RF-4C from Testors in 1/48th scale, an excellent RF-4B can be made in much the same way as described in the 1/72nd section above.

In short, this is a beautiful kit, and though expensive, it is the only way to build a thin wing Phantom without doing a lot of conversion work. We highly recommend this kit.



Alternate markings provided in the Minicraft/Hasegawa 1/48th scale kit as shown at the 1983 Hobby Industry of America show.

Monogram 1/48th Scale F-4J

This kit is a rework of Monogram's earlier F-4C/D kit, and although it has some problem areas, it is an excellent kit. While Monogram made a number of changes to the kit to make it into a -J they also forgot a couple. They left the Air Force refueling receptacle



Monogram's F-4J is a rework of their earlier F-4C/D kit in 1/48th scale.

(Monogram)

door scribed on the spine, and failed to scribe the Navy style door on the right side of the cockpits. Although new slotted stabilators are included, they have the arrowhead shaped piece engraved on top of them. This is on Air Force Phantoms, but not on USN/USMC aircraft.

The big problem area is the cockpit detail which represents an Air Force Phantom. To their credit, Monogram included a different instrument panel for the rear cockpit, so it is a little hard to understand why the consoles were not deleted and replaced with the proper vertical panels.

Although these problems exist, Monogram did an excellent job otherwise. A Navy style forward nose gear door is included, as are the longer burner nozzles, Navy style inboard pylons, and a centerline fuel tank. The longer ECM fairings, as used on the F-4N intakes, are included, and they should be cut down to the shorter length as used on the F-4J.

Otherwise, this kit is the same as the Monogram F-4C/D covered in our Part 1. Overall, it is an excellent kit, and we recommend it.

Testors 1/48th Scale RF-4C

This kit was reviewed in Part 1, and that is where it belongs, since it can only be built into an RF-4C, and not an RF-4B. Therefore, we will not review it again, but we will explain why the kit does not represent an RF-4B. First, it has the thick wings and wheels of the RF-4C, and although two or three RF-4Bs have now been retrofitted with these wings and main gear, they also have the rounded camera bay, slotted stab, and ECM fairings, none of which are included in this kit. In order to build a correct RF-4B, we recommend that

the modeler combine parts from this kit and the Minicraft/Hawegawa F-4B/N kit as described above.

1/32nd SCALE KIT

Revell 1/32nd Scale F-4J

This kit is basically the same as the Revell F-4E in 1/32nd scale covered in Part 2. Having been around for some time, the kit shows its age, and lacks much of the detailing found on 1/32nd scale kits issued recently. As usually found in the United States, the kit comes with no external stores, save for the four Sparrow missiles that are carried under the fuselage. But a Japanese issue had complete stores and a beautiful and extensive set of markings. However, this kit is hard to find in the United States, and if found, is very expensive. A less expensive way to achieve the same results is to buy a late issue of the F-4E kit that comes with stores, and modify the inboard pylons to the Navy style.

Due to space limitations, and because the comments made in our review of the F-4E version of this kit also apply here, we are not making an extensive review here. However two points are noteworthy as how this kit applies to Navy Phantoms. First, the rear cockpits have the consoles that don't belong there, and the other cockpit detail is generally not accurate. Second, by using the wings from a slatted F-4E kit, this model can be built to represent an F-4S if the modeler remembers to make other changes such as the addition of ECM fairings and the like. Regardless of which way the kit is built, it will take a lot of rework and detailing, but the results can be well worth it.



Revell's large 1/32nd scale F-4J.

(Revell)

DECAL SUMMARY

Note: It is impossible to completely review decals unless the reviewer has actually used the decals on a model to see how they fit. Additionally, markings on a given aircraft can be changed from time to time, so it is possible that the decals may be accurate for one point in time and not another. Therefore, this section is more of a listing of decals available than a review. Review comments are made only in regard to fit when we have actually used the decals or as to accuracy when the evidence clearly indicated an error.

Note: Only USN and USMC markings are covered.

1/72nd SCALE KITS

Airfix Kit Number 4013: Contains minimal markings for two aircraft.

- USN F-4B from VF-74, AJ-101
- USN F-4J, 155812, VF-31, AC-610

Hasegawa Kit Numbers JS-021/021/D0002: Contains markings for two aircraft.

- USN F-4J from VF-31, USS Saratoga, AC-103
- USN F-4J, 155800, VF-96, USS America, NG-100

Hasegawa Kit Number 1209: This is the same kit as above packaged in a Blue Angels set with Blue Angel markings.

IMC Kit for the RF-4B with "Battle Damage": Contains markings for an RF-4B of VMCJ-3, tail code TN.

MPC Kit Number 1508 and 1-4302: Contains minimal markings for an F-4B from VF-111 "Sundowners," BuNo. 153020, USS Coral Sea.

Revell Kit Number 0110: Contains markings for an F-4B from VF-102, AJ-408.

Revell Kit Number H-110 (Old USA Issue): Contains minimal markings for an F-4B, 149430.

Revell Kit Number H-110 (Great Britain Issue): Contains markings for an F-4B, 148404, VF-102, USS Enterprise, AF-108.

Revell Kit Number 4302: Contains markings for an F-4B from VF-84, 153053. Markings that should be black are represented in insignia blue.

Revell Kit Number H-186: This is a kit of five F-4Js in Blue Angels markings.

1/48th SCALE KITS

ERTL Kit Number 8213: Contains markings for two aircraft.

- USN F-4B, from VF-111, "Sundowners," USS Coral Sea, NL-201, Lt Gary Weigand and LtJG Bill Erickson on canopy rails.
- USN F-4J, 157292, VF-74, USS Nimitz, AJ-201

Note: This kit has the thicker wings of the F-4J, and does not build into a correct F-4B.

ESCI Kit Number 4067: Contains markings for a hybrid F-4 from VX-4 in a bicentennial scheme.

Hasegawa Kit Number P01: Contains markings for two F-4Js.

- USN F-4J, 155868, VF-84, "Jolly Rogers," USS Roosevelt, Lt John Bunford and LtJG Mike Seymour on canopy rails, AE-206
- USMC F-4J, 155821, VMFA-451, "Warlords," USS Forrestal, bicentennial scheme, AA-211

Hasegawa Kit Number P05: Contains markings for two aircraft.

- USN F-4B, 153009, VF-51, "Screaming Eagles," Carrier Air Wing Fifteen CAG aircraft. Cdr Tom Dunlop and Lt Doc Brown on canopy rails. NL-100
- USMC F-4N, 152323, VMFA-531, CAG aircraft for CVW-14, USS Coral Sea, NK-200

Note: These markings are to be included in the Minicraft issues of these two kits in the United States. They had not been issued at press time.

Monogram Kit Number 5805: Contains markings for the well known Playboy 1 F-4J, 153783, from VX-4 in an overall black finish.

Revell Kit Number 4501: Contains markings for an F-4J from VF-74, USS Nimitz, AJ-201.

Testors Kit Number 582: Contains markings for an RF-4B from VMCJ-3, with a gold fox and RF on a green tail.

Note: This kit has the thick wings of an RF-4C, and does not contain the ECM fairings for an RF-4B in this late scheme. Although a few RF-4Bs had the thick wings, they also had the rounded underside for the camera bay which this kit does not provide. Therefore an accurate RF-4B cannot be built from this kit without extensive modification.

1/32nd SCALE KITS

Revell Kit Number 4706: Contains markings for an F-4J from VF-96, USS Constellation, NG-112.

Revell Kit Number H-188: Contains markings for an F-4J from VF-33, USS America, AE-212.

Revell (Japan) Kit Number H-3002: Contains markings for three F-4Js.

- USN F-4J, 155553, VF-33, USS America, AE-212
- USN F-4J, 158373, VF-154, CAG aircraft from Carrier Air Wing Two, USS Ranger, NE-100
- USMC F-4J, 155754, VMFA-232

Note: The word "Carrier" is misspelled for the VF-154 aircraft.

1/72nd SCALE SHEETS

ESCI Sheet Number 72: Provides markings for an F-4J, 155812, VF-31, USS Saratoga AC-101.

ESCI Sheet Number 75: Provides markings for two F-4Bs.

- USN F-4B, 151450, VF-31, USS Saratoga, AC-100
- USN F-4B, 152239, VF-143, USS Constellation, NK-302

ESCI Sheet Number 88: Provides markings for two Marine F-4s.

- USMC F-4B, 154412, VMFA-531, EC-18
- USMC RF-4B, 153099, VMCJ-2, CY-6

Microscale Sheet Number 72-111: Provides markings for three aircraft.

- USN F-4J, 157270, VF-114, CAW-11, USS Kitty Hawk, NH-00
- USN F-4B, 153009, VF-51, CAW-15, USS Coral Sea, NL-00
- USN F-4J, 155800, VF-96, USS America, NG-100

Microscale Sheet Number 72-137: Provides markings for three aircraft.

- USN QF-4B, 148365, VC-7, Redbird, NMC-40
- USN F-4J, 155896, VX-4, Bluebird, XF-6
- USN F-4J, 153783, VX-4, Blackbird, Playboy 1

Microscale Sheet Number 72-174: Provides markings for three Navy Phantoms.

- USN F-4, from VX-4, bicentennial scheme
- USN F-4B, 151000, VF-111, USS Coral Sea, NL-200, CAG Bob Pedersen/ACI J.C. Becker on canopy rails

- USN F-4B, 152223, VF-142, NK-200

Microscale Sheet Number 72-199: Provides markings for five aircraft.

- USN F-4J, 157308, VF-11, USS Forrestal, AA-100
- USN F-4J, 155761, VF-74, AJ-210, Lt Chuck Heatly/LtJG John Koch on canopy rails
- USN F-4J, 158365, VF-21, USS Ranger, NE-206, LCdr Steve Letter/Lt Jim Williams on canopy rails
- USN F-4J, 155781, VF-33, USS Independence, AG-202
- USN F-4J, 155755, VF-92, USS Constellation, NG-207, Lt Greg Gavin/Ens Ben Arnold on canopy rails

Microscale Sheet Number 72-200: Provides markings for three Marine F-4s in bicentennial colors.

- USMC F-4J, 153775, VFMA-451, USS Forrestal, AA-200
- USMC F-4B, 151007, MARTD - Andrews, VMFA-321, MG-6
- USMC F-4J, 155733, VMFA-213, DR-3

Microscale Sheet Number 72-201: Provides markings for four Marine Phantoms.

- USMC RF-4B, 157346, VMFP-3, RF-22
- USMC RF-4B, 153102, VMCJ-1, RM-615
- USMC RF-4B, 153101, VMFP-3, RF-10, bicentennial scheme
- USMC F-4J, 155855, VFMA-212, WP-03, Capt Tullos/Lt Wismer and Wizard/Cajun on canopy rails, Top Gun markings.

Microscale Sheet Number 72-218: Provides markings for an F-4B, 152326, from VF-51, USS Roosevelt, NM-100.

Microscale Sheet Number 72-309: Provides markings for two F-4Ns in bicentennial markings.

- USN F-4N, 150452, VF-151, USS Midway, NF-205
- USN F-4N, 155433, VF-161, USS Midway, NF-100

Microscale Sheet Number 72-310: Provides markings for three Phantoms.

- USMC F-4N, 153050, VMFA-531, MAS El Toro, EC-10
- USN F-4N, 151451, VF-151, USS Midway, NF-205
- USMC F-4J, 155783, VMFA-232, WT, bicentennial scheme

Microscale Sheet Number 72-316: Provides markings for an F-4N, 151400, from VF-151 in CAW-5 markings, USS Midway, NF-200.

Microscale Sheet Number 72-317: Provides markings for an F-4J, 153792, VF-101, AD-101, with Cdr John Disher on canopy rail. These markings are for a bicentennial scheme.

Microscale Sheet Number 72-324: Provides markings for two USMC RF-4Bs.

- USMC RF-4B, 153107, VMFP-3, RF-23
- USMC RF-4B, 153095, VMFP-3, RF-14

Microscale Sheet Number 72-333: Provides markings for an F-4J, 155532, VF-33, from the USS Eisenhower, AG-200, Cdr Bill Westernman on canopy rails

Modeldecal Sheet Number 2: Provides markings for a USMC F-4B, 148373, VMFA-531, MCAS El Toro, EC-00

Modeldecal Sheet Number 15: Provides markings for an F-4B, 151468, VF-111, "Sundowners, NAS" Miramar, NL-21

1/48th SCALE SHEETS:

Detail & Scale Sheet Number 0648: Provides markings for three specially marked F-4J/S Phantoms.

- USN F-4J, 158350, VX-4, "White Bunny," in an overall white scheme and gray Playboy bunny on tail.
- USN F-4J, 153777, VF-74, "Twentieth Anniversary Phantom," commemorating VF-74's twenty years in Phantoms. "First in Phantoms" on tail, with Phantom logo and 1961-1981, USS Forrestal, AA-201.
- USN, F-4S, 155749, VF-301, in unusual camouflage scheme with large MiG-17 kill marking on either side of the aft fuselage. LCdr Abner Wigdahl and LCdr Preston Hiers on canopy rails.

Microscale Sheet Number 48-33: Provides markings for two bicentennial F-4Ns.

- USN, F-4N, 155433, VF-151, USS Midway, NF-201
- USN, F-4N, 150452, VF-161, USS Midway, NF-100

Microscale Sheet Number 48-34: Provides markings for a bicentennial USMC F-4J, 155783, of VMFA-232, WT.

Microscale Sheet Number 48-61: Provides markings for two F-4Ns.

- USMC F-4N, 153050, VMFA-531, EC-10
- USN F-4N, 151451, VF-151, USS Midway, NF-201

Microscale Sheet Number 48-73: Provides markings for two Navy F-4Bs

- USN F-4B, 151100, VF-111, "Sundowners," USS Coral Sea, NL-200
- USN F-4B, 152223, VF-141, NK-200

Microscale Sheet Number 48-86: Provides markings for three USMC F-4Js.

- USMC F-4J, 153792, VMFA-232, WT-2
- USMC F-4J, 153907, VMFA-235, DB-9
- USMC F-4J, 155754, VMFA-232, WT-10

Microscale Sheet Number 48-87: Provides markings for three USMC F-4Bs.

- USMC F-4B, 148398, Commander MAG-32, DW-100
- USMC F-4B, 151463, VMFA-323, WS-4
- USMC F-4B, 151471, VMFA-312, DR-4

Microscale Sheet Number 48-108: Provides markings for an RF-4B, 153092. VMCJ-3, TN.

Microscale Sheet Number 48-110: Provides markings for two RF-4Bs.

- USMC RF-4B, 153107, VMFP-3, RF-23
- USMC RF-4B, 153095, VMFP-3, RF-14

1/32nd SCALE SHEETS

Microscale Sheet Number 32-27: Provides markings for two Navy F-4Js.

- USN F-4J from VF-31, USS Saratoga, AC-103, Lt Jim Stillman/LtJG Fred Richards on canopy rails, P/C Ames on nose gear door
- USN F-4J, 144895, VF-96, USS Constellation, NG-114, Lt Bill Goodin/Lt Dave Bunnell on canopy rails

Microscale Sheet Number 32-28: Provides markings for two F-4Js.

- USMC F-4J, 153884, VMFA-235, DB-12
- USN F-4J, 155755, VF-92, USS Constellation, NG-207, Lt Greg Gavin/Ens Ben Arnold on canopy rails

Microscale Sheet Number 32-35: Provides markings for two USMC F-4Js.

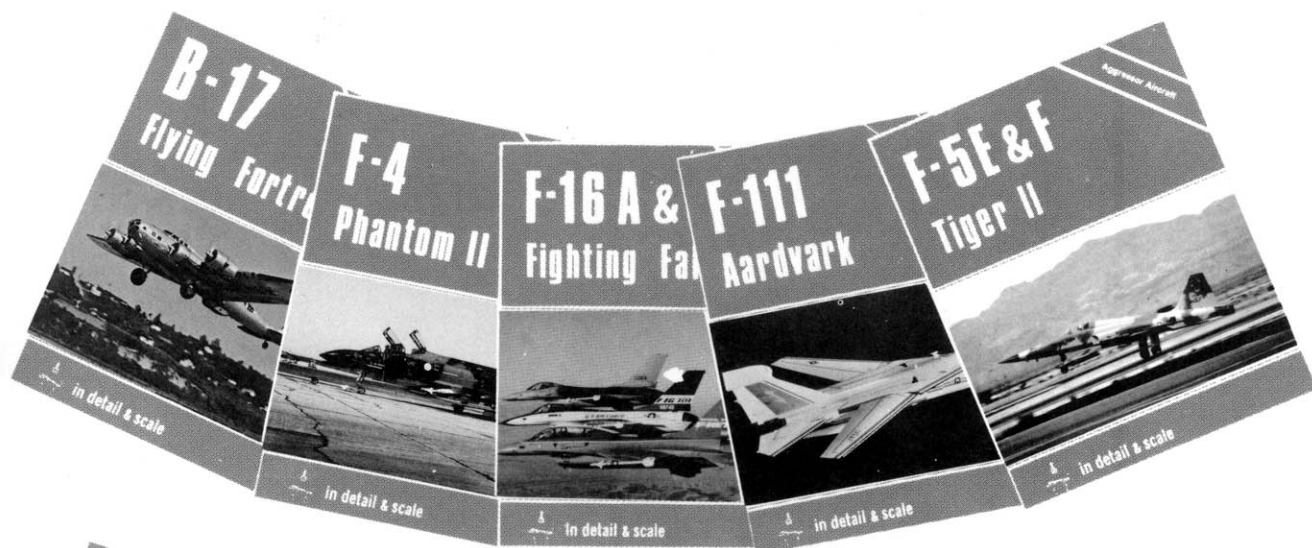
- USMC F-4J, 155521, VMFA-251, DW-7
- USMC F-4J, 153859, VMFA-232, WT-6

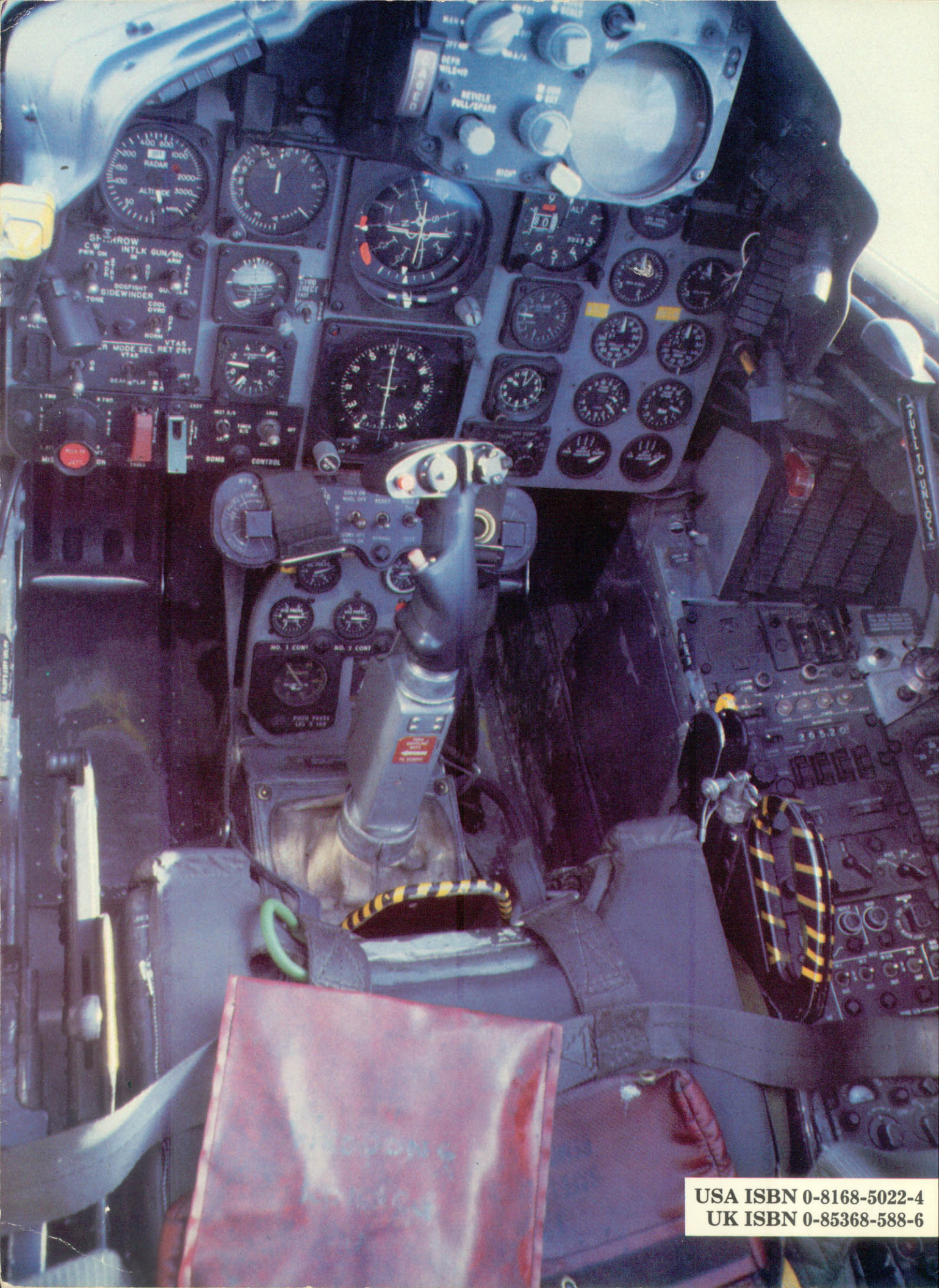
Microscale Sheet Number 32-35: Provides markings for an F-4J, 153077, from the U.S. Naval Air Test Center, Pax River, Maryland.

AERO PUBLISHERS



Volumes in the DETAIL & SCALE SERIES





D&S VOL. 12

F-4 PHANTOM II-PART 3

USN & USMC VERSIONS

AERO -



USA ISBN 0-8168-5022-4
UK ISBN 0-85368-588-6